REPORT RESUMES

ED 003 339 24

FACTORS AFFECTING CAREER CHOICES OF ADOLESCENTS.

BY- TYLER, LEONA E. SUNDBERG, NORMAN D.
OREGON UNIV., EUGENE

REPORT NUMBER CRP-2455 PUB DATE 64
EDRS PRICE MF-$0.36 HC-$9.48 237P.

DESCRIPTORS- *CAREER PLANNING, *ADOLESCENTS, *CAREER CHOICE, *COGNITIVE PROCESSES, SEX DIFFERENCES, SOCIAL CLASS, RELIGIOUS FACTORS, ETHNIC STATUS, PSYCHOLOGICAL CHARACTERISTICS, COUNSELING, SOCIOCULTURAL PATTERNS, *CULTURAL AWARENESS, FACTOR ANALYSIS, OCCUPATIONAL CHOICE, GRADE 9, ENKHUIZEN, NETHERLANDS, NORTH BEND, OREGON

THE OBJECTIVES OF THIS PROJECT INCLUDED--(1) OBTAINING KNOWLEDGE ABOUT VARIETIES OF COGNITIVE STRUCTURES YOUNG PEOPLE USE IN THINKING ABOUT FUTURE CAREER POSSIBILITIES AND DETERMINING THE EXTENT TO WHICH THE LIFE STYLES REPRESENTED IN ADOLESCENT GROUPS ARE RELATED TO SEX, SOCIAL CLASS, RELIGION, NATIONALITY, AND SEVERAL KINDS OF PSYCHOLOGICAL CHARACTERISTICS, (2) OBTAINING EVIDENCE REGARDING THE CONSTRUCT VALIDITY OF SEVERAL NEW ASSESSMENT TECHNIQUES THAT MAY PROVE USEFUL TO COUNSELORS, AND (3) FACILITATING THE PLANNING OF SUBSEQUENT RESEARCH STUDIES ON THE ORIGINS AND CONSEQUENCES OF DIFFERENT KINDS OF POSSIBILITY STRUCTURES. SEVERAL KINDS OF DATA WERE OBTAINED FROM FOUR CAREFULLY SELECTED SAMPLES OF ADOLESCENTS IN THE NINTH GRADE (OR ITS EUROPEAN EQUIVALENT) FROM THE STATE OF OREGON AND THE NETHERLANDS. FROM THE SAMPLES OBTAINED, IT WAS CONCLUDED THAT DUTCH SUBJECTS ARE MORE AWARE OF THEIR TOTAL SOCIETY AS COMPOSED OF CHILDREN AND ADULTS, WHEREAS AMERICAN ADOLESCENTS ARE MORE AWARE OF THEIR SPECIAL TEEN-AGE SOCIETY. IN ADDITION, DUTCH ADOLESCENTS APPEARED TO BE AWARE OF AND FAMILIAR WITH SIGNIFICANTLY MORE OCCUPATIONS. (LP)

ED003339

FACTORS AFFECTING CAREER CHOICES OF ADOLESCENTS

Cooperative Research Project No. 2455

Leona E. Tyler
Norman D. Sundberg

University of Oregon

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
Office of Education
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated do not necessarily represent official Office of Education position or policy.

FACTORS AFFECTING CAREER CHOICES OF ADOLESCENTS

Cooperative Research Project No. 2455

Leona E. Tyler
Norman D. Sundberg

University of Oregon
Eugene, Oregon

1964

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education, and Welfare.

ED003339

ACKNOWLEDGMENTS

This investigation would not have been possible without the help and cooperation of many people. We should like to express our appreciation for all of this assistance. First of all, in the planning of the Netherlands project Mr. A. J. S. van Dam of the Educational Research Center in Amsterdam and Professor Helena Stellwag of the Institute of Education, University of Amsterdam, gave us valuable advice. Dr. Erdman-Schmidt, Miss Anne Marie Grewel, and Mr. G. W. Fouché, also of the Institute of Education, helped us to construct the Dutch form of the questionnaire and the instructions for the tests. University staff members and students who did the testing in Enkhuizen are Miss Anne Marie Grewel, Miss B. Otten, and Miss G. Reiche. Special thanks are due Miss Nans van Mourik-Broekman, who not only served as research assistant throughout the whole time the work was going on in Enkhuizen, but also made valuable contributions to the project during her summer in the United States.

The principals of the four schools in which we worked in Enkhuizen also deserve our appreciation, Mr. J. W. Biesboer, Mr. H. Boerma, and Mr. J. J. Oppedijk. We are especially grateful to Mr. K. K. A. van Vals, who made the general arrangements with the heads of the other schools and found a place for us to conduct the interviews.

In the American schools where we worked, the persons to whom we owe special debts of gratitude are Mr. Robert S. Bordner and Mr. Carroll Cone in North Bend, Mr. David Mortimore in Eugene, and Miss Mary I. Withycombe in Portland.

Finally we would like to thank the members of the research staff, graduate assistants, John Vincent and Carolyn Denny, National Science Foundation students, Meredith Payne Edwards, Nancy Chapman, and Beverly Ayers, and the secretary, Karen Newsom.

TABLE OF CONTENTS

Page

ACKNOWLEDGMENTS ii

LIST OF TABLES vi

LIST OF FIGURES ix

Chapter

1. INTRODUCTION 1

    Our Need to Understand the Choice Process
    An Emerging Theory
    Long-Range Research Plan
    Relationship to Previous Research on Choices, Interests, and Values

2. PREVIOUS RESEARCH 12

    Research on Vocational Development
    Research on Vocational Interests
    Research on Values
    Research on Cognitive Styles
    Research on Decision Processes

3. PROCEDURES 18

    General Plan
    Communities, Schools, and Samples
    Data Collection Procedures
    Preparing Data for Analysis
    The Four Research Projects in Outline

4. ANALYSIS OF DATA AND FINDINGS FROM FIRST PROJECT-- PERCEPTION OF POSSIBILITIES 36

    Enkhuizen and North Bend Comparisons
    North Bend, Eugene, and Portland Comparison
    Implications of the Three Cities Comparison for the Dutch-American Comparison
    More Detailed Analysis of Dutch-American Differences

TABLE OF CONTENTS CONT.

Chapter Page

5. ANALYSIS OF DATA AND FINDINGS--DAILY ACTIVITIES 52

Developing a Classification System
Comparison of Enkhuizen and North Bend Equated Samples
Comparison of North Bend, Eugene, and Portland Samples

6. ANALYSIS OF DATA AND FINDINGS FROM THIRD PROJECT--CHOICE PATTERNS 60

Linkage Analyses to Identify Clusters of Similar Persons
Check List Analysis of the Grouping and Labeling of Choice Pattern Items
Item Analyses

7. ANALYSIS OF DATA AND FINDINGS FROM FOURTH PROJECT--VALUES PROJECT 86

Analysis of Inter-Item Correlations.
  Dimensions of Valuing
Analysis of Inter-Person Correlations
  Types of Valuers

8. CONCLUSIONS AND IMPLICATIONS 104

Group Differences
Individual Differences
Evaluation of Progress Toward Original Objectives

REFERENCES 115

APPENDICES 118

LIST OF TABLES

Table | Page

1. Means of Equated Samples of Dutch and American Boys and Girls on Items Listed, Checked, or Classified in Free Response Section of Questionnaire 37

2. F Values for Analysis of Covariance on Questionnaire Responses for Equated Samples of Dutch and American Boys and Girls 38

3. F Values for Analysis of Covariance on Questionnaire Responses for Equated Samples of Dutch and American Subjects Grouped into Three Socio-Economic Classes 40

4. Means of North Bend, Eugene, and Portland Samples of Boys and Girls on Items Listed, Checked, or Classified in Free Response Section of Questionnaire 42

5. F Values for Analysis of Covariance on Questionnaire Responses for Three American Samples, North Bend, Eugene, and Portland 43

6. Free Responses Expressed as Proportions Relevant to Dutch-American Differences 46

7. Occupations Listed and Checked as Possibilities by Three or More Boys or Girls in the Dutch or the American Sample . . . 48

8. Free Time Activities Listed and Checked as Possibilities by Five or More Boys or Girls in the Dutch or the American Sample 49

9. Means for Daily Activity Record Variables. Equated Dutch and American Samples 53

10. F Values for Nationality, Sex, and Interaction. Daily Activity Record Variables. Equated Dutch and American Groups 54

11. Means for Daily Activity Record Variables. Three American Samples 58

12. F Values for Community, Sex, and Interaction. North Bend, Eugene, and Portland 59

LIST OF TABLES CONT.

Table | Page

13. EFT Means and Standard Deviations for Subgroups Differentiated According to Presence or Absence of Evidence for Primitive Concepts 79

14. Figure Drawing Means and Standard Deviations for Subgroups Differentiated According to Presence or Absence of Evidence for Primitive Concepts 79

15. Distributions of EFT Scores for Subgroups Differentiated According to Presence or Absence of Evidence for Primitive Concepts. North Bend Group 81

F-1. Standard Deviations of Equated Groups of Dutch and American Boys and Girls on Items Listed, Checked, and Classified in Free Response Sections of Questionnaire 192

F-2. Means of Equated Samples of Dutch and American Subjects Grouped into Three Socio-Economic Classes for Items Listed, Checked, and Classified in the Questionnaire 193

F-3. Standard Deviations of Equated Samples of Dutch and American Subjects Grouped into Three Socio-Economic Classes for Items Listed, Checked, and Classified in the Questionnaire . . . 194

F-4. Standard Deviations for Sex Groups. Three American Samples . . . 195

G-1. Standard Deviations for Daily Activity Record Variables. Equated Dutch and American Samples 197

G-2. Standard Deviations for Sex Groups on Three American Samples on Daily Activities 198

H-1. Means for Choice Pattern Variables, Equated Dutch and American Samples 200

H-2. Standard Deviations for Choice Pattern Variables. Equated Dutch and American Samples 201

H-3. F Values for Choice Pattern Variables, Equated Dutch and American Samples 202

H-4. Comparison of Dutch and American, Male and Female on Values--Occupations Check List 203

H-5. Comparison of Dutch and American, Male and Female on Values--Free Time Activities Check List 204

H-6. Comparison of Dutch and American, Male and Female on Interests--Occupations Check List 205

LIST OF TABLES CONT.

Table Page

H-7. Comparison of Dutch and American, Male and Female on Interests--Free Time Activities Check List 206

H-8. Comparison of Portland and Eugene, Male and Female on Values--Occupations Check List 207

H-9. Comparison of Portland and Eugene, Male and Female on Values--Free Time Activities Check List 208

H-10. Comparison of Portland and Eugene, Male and Female on Interests--Occupations Check List 209

H-11. Comparison of Portland and Eugene, Male and Female on Interests--Free Time Activities Check List 210

H-12. Choice Pattern--Occupations. Number of Positive Choices for Each Occupation in Each Sample 211

H-13. Choice Pattern--Free Time Activities. Number of Positive Choices for Each Activity in Each Sample 213

I-1. Rotated Factor Matrix. Personal Directions. Item Factors. 96 American Subjects 216

I-2. Rotated Factor Matrix. Personal Assumptions. Item Factors. 96 American Subjects 218

I-3. Rotated Factor Matrix Based on Matrix of Inter-Person Correlations. North Bend Sample 220

I-4. Rotated Factor Matrix Based on Matrix of Inter-Person Correlations. Dutch Sample 222

J-1. Means on All Test Scores for All Samples 224

J-2. Standard Deviations on All Test Scores for All Samples 225

LIST OF FIGURES

Figure Page

1. Clusters of Persons Identified Through Linkage Analysis of Similarity Indices Based on Choice Pattern Responses. (North Bend Sample) 62

2. Clusters of Persons Identified Through Linkage Analysis of Similarity Indices Based on Choice Pattern Responses. (Enkhuizen Sample) 66

3. Clusters of Persons Identified Through Linkage Analysis of Similarity Indices Based on Choice Pattern Responses. (Eugene Sample) 70

4. Clusters of Persons Identified Through Linkage Analysis of Similarity Indices Based on Choice Pattern Responses. (Portland Sample) 72

CHAPTER 1

INTRODUCTION

1. Our Need to Understand the Choice Process

In the increasingly complex modern world, the making of choices has become a more and more important aspect of an individual's life. As society becomes increasingly complex and the rate at which social change occurs accelerates, more alternative courses of action confront each individual at each decision point in his life, and such decision points come more often. The miner's son no longer needs to enter the mine; the farmer's son may be required to deal with a multiplicity of city jobs instead of continuing in a path marked out for him. As transportation and communication become ever faster and more efficient, people and ideas from many parts of the world jostle one another wherever one lives. Instead of clinging with unthinking loyalty to the faith of his fathers, a young person must confront the fact that there are many other faiths that also command men's loyalty. Marriages are no longer arranged by parents in accordance with well-defined standards. Instead, the boy or girl is expected to choose a mate, and the range of possibilities from which such choices can be made is constantly widening, as marriages between individuals of different social classes, different religions, different countries, and different races are tolerated if not approved. Decisions in the realm of moral and ethical behavior are increasingly likely to involve a choice between several alternative courses of action rather than between simple black and white "right" and "wrong" acts.

It could be argued that all of these varieties of choice have confronted individuals at all periods of history. Young people have often left the beaten path to follow unusual careers. Statesmen have always had to struggle with complex moral choices. Individual men and women in many societies have married persons of their own choosing. The new thing in our time is not that such choices occur, but that they are being required of everyone, whether or not he wishes to make them. It is possible to see some of the major problems of our time as outgrowths of this demand--anxiety and conflicts over identity in the individual, blind conformity, apathy, or delinquency in the group. Life no longer presents to the growing individual a clear, coherent structure into which he can fit his ideas; he must create one himself.

Furthermore, the accelerating pace of social change means that no choice an individual makes can ever be final. It is estimated, for example, that because of repeated technological advances serving to make some jobs obsolete, the average person must expect to work at as many as six different occupations during his lifetime. He must also expect to move fairly frequently. It is reported that every year one person in five now changes his address. Each move calls for choices about housing, neighborhoods, and schools as well as jobs. To a considerable extent, the same demand for repeated choices characterizes the other areas we have discussed. While it is still rare to find a man who marries six times, it is a fact documented by extensive divorce statistics that many persons do choose mates two or three times, and because of the possibility of divorce in our society, even husbands and wives who stay together in many cases must repeatedly choose to do so rather than take their union for granted. Similarly, ethical and moral choices must constantly be re-evaluated in the light of increasing knowledge and new social conditions. What young persons need is not just to make a good choice but to learn how to choose. This may well be one of the principal challenges that education in the future must meet.

Therefore it is the process of choice that we need to understand, a process about which we actually know very little. It is convenient to use career choice as a prototype of all these other choices, since it is a relatively visible process which subjects feel free to discuss. In this project, we have placed considerable emphasis on expressed attitudes toward various occupations, but the emphasis is on how the individual is choosing rather than on what he has chosen. We have also sought information about choices of free time activities and general verbalized values, so that the findings would not relate exclusively to the process of career choice.

2. An Emerging Theory

The specific research questions to be asked were derived from what has so far been formulated of a theory of human variability, designed to account for both individual differences and differences from time to time in the same person. The fundamental idea is this: the world with which one of the higher animals deals is essentially a universe of possibilities rather than of definite things or specific demands. The equipment with which nature has endowed him also constitutes a universe of possibilities. His anatomical structures are capable of producing an inconceivably great number of movement combinations. His receptors are sensitive to an inconceivably wide variety and range of stimulating energies. His individuality and the variability in his behavior from time to time are based on the selection he makes from among these possibilities. The selection is controlled by the way or ways in which he organizes them.

The occurrence of such an organizing-selecting process follows inevitably from two biological principles. The first is that life involves activity. We are assuming that every living creature is always in some way active--that activity ceases only with death. Many kinds of evidence support this assumption, perhaps the most cogent coming from embryology. The heart starts to beat very early; muscles are prepared for use long before they can be activated by neural means; spontaneous movements before and after birth occur earlier than responses to identificable stimuli. A corollary to this basic statement is that life involves reactivity or stimulatibility. Each organism is under a constant bombardment of energies of many sorts from outside itself.

The second basic biological fact is that any individual organism has only a limited amount of time at his disposal. This time limit imposes selectivity upon him. He can carry out, simultaneously or successively, only a fraction of the varieties of activity possible for him. He can react to only a fraction of the energies that impinge upon him.

While these basic concepts have been formulated in biological terms, it is clear that social forces also contribute to the production of activity, reactivity, and selectivity, especially in the human individual. All of these things are encouraged and rewarded by persons in a child's social environment.

Faced with an inescapable situation in which he must do something but cannot do everything, how does an individual proceed? We are assuming that a two-step process occurs. First, some sort of alternative possibility structures must crystallize out of the amorphous mass of possibilities. Second, one of them must be selected to control activity.

The concept "possibility structure" is a hypothetical construct used to summarize a large set of cognitive and previously learned dispositions and to suggest heuristically further hypotheses for research. We see the concept as a tool, which we hope we can discard at some future date when a more finely honed conceptual instrument is available. Possibility structures are those aspects of the personality (personality here conceived as referring to inner organizational properties of a person in Allport's sense) having to do with perception of potential behaviors, roles and affiliations vis a vis the external environment, evaluation or weighting of these relative to the self (e.g., "This is something I might do" or "This is more nearly my kind of activity than that"), and some kind of organized storing of these in the person's "mental equipment" analogous to a way that a computer stores routines which can be called into use when necessary. As the last characteristic suggests, "structure" implies some permanency and consistency in this aspect of personality. The second concept, to carry the computer analogy further, is analogous to the master program which selects from all of the possible routines and data series the particular actions that are to be carried out.

The foregoing statement of what occurs in the development of an individual is applicable to animals as well as men. But in human beings, the process has some special features because of the fact that individuals not only live under these biological imperatives but also are more or less aware of them. Man possesses a concept of possibility, as distinguished from actuality. Furthermore his time perspective is long enough so that he can develop possibility structures that span years rather than moments or hours. Another distinctive thing about the human situation is that possibility structures can be perpetuated in cultural and linguistic forms and imparted to individuals in "ready-made" form. The values we shall be considering in the research report can be thought of as this sort of structure.

Thus we are operating on the hypothesis that there is patterning in the preferences and selections made in the realm of possibilities presented to a person in his living situation, i.e., that there are individual choice patterns. If non-random patterns are detected in choices, what are the bases for the consistencies? They might reflect either consistency of "external opportunities and demands" or consistency of "internal controls or selective mechanisms." In our research we are interested in both, but are assuming that because of the social trends mentioned in the first few paragraphs, the most important task for research right now is to study the internal controls. We are paying some attention to external consistencies through using two cultures and including in our study broad demographic characteristics of subjects, reports of daily activities, and an exploratory analysis of the behavior settings present in one school. The form research must ultimately take is one which combines the study of environmental characteristics with the study of personal predispositions, probably taking the form of conditional statements describing individuals' behavior. Two examples follow: Mary, who uses prestige values as a preferred means of controlling choices, will, in the presence of an opportunity to be either an actress or a stage hand in a class play, verbalize a preference and take steps to achieve the actress position. James, who is a shy youngster inclined to cope with social situations by withdrawal but who uses esthetic values to control choices, will withdraw in a class whose teacher and classmates are insensitive to esthetic values but will participate actively in a class where esthetic values are emphasized. The joint concern with person and environment calls attention to both the opportunity structure presented to the individual and the possibility structure as the person perceives his opportunities and is predisposed to choose from them. The effect of this concern would be a two-eyed look at both kinds of structure in counseling or planning educational programs for disadvantaged, gifted, or just average youngsters.

However, the major task before us now is the analysis of the internal structures. For this endeavor we would like to have concepts which are (a) capable of being operationally defined, (b) integrated in at least a proto-theory of personality and individual development, (c) close enough to "folk thinking" or common (low level abstraction) language to be of use in conceptualizing the counseling process. These three requirements present difficult hurdles and some conflicts with one another. Through much struggling with our concepts as we have worked with research data and also in interaction with our counseling and clinical experiences, we have settled on three basic concepts upon which to organize our research efforts--perception of possibilities, choice patterns, and values. Just what these mean will become clearer in the discussion of procedures and results in this report.

3. Long-Range Research Plan

The investigation of individual differences in the ways in which human beings think about possibilities, make life plans, and choose the directions in which their development is to proceed will involve a series of research projects. The first step is to identify at least some of the structures or organizing principles different individuals use. The next step will be to work out improved techniques for assessing these individual characteristics reliably. The third and fourth steps, which could be taken in either order, will involve longitudinal studies designed to show the effects of these different styles of organizing and choosing on later life, and the origins of these different styles in early life. The fifth step will consist of experiments on techniques for training children to use the methods that we have found lead to desirable consequences and to modify or abandon those that we have found hamper later development.

The research reported here is the first of these projected studies--

the preliminary exploration of the terrain in which we are interested. Since we were looking for differences in possibility structures, we attempted to maximize variety in our subjects and in our assessment techniques. To insure a wide variety of subjects we worked with boys and girls from three social classes in a Netherlands community and three American communities. Because the Netherlands still provides more external structure within which its young people must operate than the United States does (different types of schools leading to different career possibilities and considerable parental influence in the choice of schools) it seemed possible that there would be differences between the kinds of thinking about choices that would be expressed by young persons in the two countries.

To maximize variety in the responses our assessment techniques would stimulate, we used some standardized tests and some methods that provided a minimum of imposed structure, so that each subject would be free to structure the situation in his own characteristic way. We also obtained background information and a report of how time was actually spent during four days of each subject's life.

4. Relationship to Previous Research on Choices, Interests, and Values

There are at least two ways in which this research undertaking differs from most previous ones in the related areas of career choice, interests, and values. The first is that we are attempting to look at several possible kinds of choice determiners simultaneously instead of separately. Most previous studies of career choice, for example, have looked for the same kind of correlates of this important life decision in every subject. An investigator studying sociological factors relates the choice to circumstances; an investigator studying interests relates it to interests; an investigator studying self-concepts relates it to this characteristic.

The assumption is that the same determiners are relevant in all cases. It is just this assumption that may not be sound. It seems quite possible that there are different kinds of controlling structures for different persons. Interests, values, needs, self-concepts, habits of response to external pressures--these may be alternative rather than parallel characteristics. We are trying to find out not just how much of each trait a person possesses, but also which traits or characteristics are *relevant* in his life. We have not, of course, considered all possible choice determiners, but we have tried to sample several of them.

The second principal way in which the present approach differs from most of those previously used is that we have attempted to make sharp distinctions between concepts often used interchangeably. Anyone surveying the research in the general area of values, interests, preferences, beliefs, and the like, encounters a confusing picture. Because different investigators use terms like values in different ways, it is difficult to combine their findings. As work with our own data has progressed, we have found that we were constantly sharpening the distinctions we made. They can be summarized as follows:

A *preference* is a simple unanalyzed difference in affective response to two or more alternatives. It may or may not be stable from time to time, and it may or may not be related to any personality characteristic of deeper significance.

An *interest* is a stable positive or negative attitude toward an activity or a class of similar activities. It is a spontaneous reaction to the intrinsic features of the activity itself without regard to its by-products or consequences.

A *value* is a "conception of the desirable that is relevant to selective behavior" (Kluckhohn). It is more than just a descriptive label for what one chooses; it always implies a judgment of what ought to be chosen, the desirable rather than merely the desired.

In our thinking about the area of values and in our search for statements expressing desiredness and oughtness, we discerned an important further distinction. It is related to the distinction Jacob and Flink (1962) make between values and beliefs and to Kluckhohn and Strodtbeck's (1961) distinction between values and value-orientations. We have come to label these two terms personal directions and personal assumptions.

Personal Directions cover the set of principles or criteria which the individual endorses, relating to desirable ways of living, orientations and movements towards goals or preferable kinds of action. The word "direction" is deliberately chosen to emphasize choices for moving and becoming, rather than choices of end states or goals.

On the other hand, Personal Assumptions include the array of beliefs, principles, or hypotheses which the individual holds about the nature of the world which he expects to encounter in his personal life. These assumptions relate to the structure of things and people which undergrid any movement towards personal goals. They indicate the kind of world the person believes he must use in moving toward his preferred way of living. Typically they would be either statements assumed to be true about nature, such as "Most people can be trusted," or conditional statements, such as "If one wants to be successful, he must work hard."

While it is often difficult in practice to make these distinctions, we have come to think that they refer to important aspects of individual differences--aspects that should not be ignored.

A complete account of the psychological structures involved in choices would have to include also needs, coping mechanisms, and perhaps several other kinds of motivational variables. One advantage of the free response techniques we have emphasized is that they should eventually lead to sounder judgments about which research variables it is advisable to combine in a single study. For the present, we chose to focus principally on perception of possibilities, general cognitive styles, interests, and values.

This then, in summary, is our purpose: to study the different kinds of structure individuals impose upon the world of possibilities with which they are confronted, to distinguish as sharply as we can between several different varieties of structure, and to describe the outlook and behavior of individuals in these terms. Eventually we hope to find out how these differences originate, and to what consequences they lead. Armed with this kind of knowledge, the resources of counseling and of education can be directed to the improvement of the choice process as it must function in our complex, modern world.

The study had three principal objectives:

1. To obtain knowledge about the varieties of cognitive structures young persons use in thinking about possibilities and making choices by identifying groups of subjects with similar possibility structures and determining the extent to which the life styles represented in these groups are related to sex, social class, religion, nationality, and several kinds of psychological characteristics.
2. To obtain evidence with regard to the construct validity of several new assessment techniques that may prove useful to counselors.
3. To facilitate the planning of subsequent research studies on the origins and consequences of different kinds of possibility structures.

CHAPTER 2

PREVIOUS RESEARCH

There are no previous research investigations to which the present study is linked in a direct way. As explained in the previous chapter, its principal distinguishing feature is that it combines concepts and methods previously employed separately. What we shall summarize here are the main lines of research that have led to these concepts and methods and posed the questions we are attempting to answer.

1. Research on Vocational Development

One of the most influential ideas in occupational psychology since World War II has been the proposition that vocational choice is a process of development involving successive stages rather than a single event. Large-scale research programs based on this point of view are in progress at Harvard Graduate School of Education under Tiedeman's direction and at Teachers College, Columbia University, under Super's direction. The particular study to which the present one is most clearly related is reported in the monograph by Super and Overstreet (1960). Super's Career Pattern Study enrolled practically the total population of eighth- and ninth-grade boys in the schools of Middletown, New York, during 1951-52 in a comprehensive study, using tests, interviews, and observational techniques. The plan calls for periodic follow-up studies over a 20-year period. The purpose of this first analysis of the information obtained about the boys in the original ninth-grade sample was to determine how vocational maturity, the key concept in vocational development theory, could best be assessed.

Twenty possible indices were correlated with one another and those selected that formed a coherent, meaningful cluster. What the six finally selected seemed to involve was *orientation toward choice*. Persons high on these indices showed some awareness that choices would be required of them and some evidence of planning and information seeking. One could say that our present research project takes up the task of analyzing *orientation toward choice* in more detail. It is designed to produce information about the formal characteristics of the thinking that individuals do at this stage. Incidentally, the *Work Values Inventory* constructed for the Career Pattern Study and analyzed intensively in a later study (Super, 1962) gave us a framework about which to organize the values aspect of the responses to occupational items we obtained. Also, Super's early study of avocational interests (Super, 1940) had some influence on our decision to analyze responses to items about free time activities along with occupational items.

2. Research on Vocational Interests

The present research undertaking is also related to the whole body of research findings on vocational interest tests. The questions we are asking are in large part those raised by a longitudinal study of the development of children's interests over the 12-year age span from 6 to 18 (Tyler, 1964). This study suggested that the motivational patterns measured in adults by interest tests like the Strong Vocational Interest Blank tend to stabilize in individuals by the 14-year level, but that "interest" is perhaps too narrow a word to describe them--that different individuals may use a variety of controlling organizations or "programs" to govern the selection and rejection of possibilities with which they are confronted. The attempt to study this more inclusive concept of mental organizations governing selection was a natural next step.

Throughout the decades in which so-called vocational interest tests have been available, various investigators have attempted to find out how the traits such tests measured were related to other personality traits. While measures of general adjustment or tendencies toward specific kinds of psychiatric deviation have generally not correlated with interest scores, a broad social dimension ranging from extraversive to introversive characteristics has repeatedly shown a relationship to total interest pattern. Dunnette, Kirchner, and de Gidio (1958) found that adult men scoring like sales, verbal, and personnel workers on the Strong scored higher than those with other types of interest pattern on Need Exhibition and Need Dominance from the Edwards Personal Preference Schedule and on the scales for Social Status, Socialization, and Social Presence on the California Psychological Inventory. Stricker and Ross (1962) found that in a group of Stanford male freshmen, those with interests like scientists were classified as introverts on the Myers-Briggs Type Indicator, while those with interests like business and personnel men were classified as extroverts.

The other consistent relationship appearing repeatedly when interest and personality tests are administered to the same subjects is a correlation between interests and values. Sarbin and Berdie (1940) reported significant correlations between Strong scales and similar-appearing scales on the Allport-Vernon Study of Values. Ferguson, Humphreys and Strong (1941) factor analyzed such correlations and demonstrated that the obtained factors were defined by loadings on both interest and values scales. Super (1962) obtained similar "interest plus value" factors from an analysis of correlations between scores obtained from the Strong Vocational Interest Blank and the Super Work Values Inventory. This kind of evidence for a partial overlap between what are generally called interests and what are generally called values influenced our decision to use both kinds of variable in this study and to employ procedures that would allow a more detailed analysis of this relationship than former studies have carried out.

One procedure designed to provide information about the thinking underlying individual choices and rejections of occupations and free time activities had been tried out in an exploratory study by Tyler (1961). In this Choice Pattern procedure, the subject, after he has sorted items into positive and negative groups, is asked to group together those he regards as similar and then to give a reason for his groupings. This preliminary study indicated that a number of aspects of individuals' performances showed an adequate degree of stability over a three-month interval. (The Choice Pattern technique will be described in greater detail in the next chapter.)

3. Research on Values

Most of the previous research on values is not closely related to our present efforts. Dukes (1955) and Albert and Kluckhohn (1959) provide useful summaries. The discussions of how values are to be defined by Jacob and Flink (1962) and M. B. Smith (1963) were particularly helpful in clarifying our thinking about the concept. Decisions as to what value dimensions should be represented in the items we selected were based on Morris (1956), Kluckhohn and Strodtbeck (1961), and Allport, Vernon, and Lindzey (1951).

There are two research studies bearing some relationship to ours. One is Super's (1962) investigation of work values, already commented upon in a previous section. The other is Dole's (1961) survey of values determining educational-vocational choices in Hawaii. The questions with which he was concerned were similar to ours, but the techniques of investigation were different. We are studying intensively in a relatively small number of subjects the relationships his extensive survey turned up. Our findings can thus be regarded as complimentary to his.

4. Research on Cognitive Styles

Thinking in broad terms of cognitive structures controlling an individual's selection of possibilities led to an examination of research on individual differences in cognitive style. There are two major research programs. One, at the Menninger Foundation, has delineated several of these cognitive control principles--leveling-sharpening, field articulation, scanning-focusing, Gardner, et al. (1959, 1960). The other, at the Witkin research laboratory, has centered its efforts on a dimension first called field dependence-independence (Witkin, et al., 1954, 1962), and later psychological differentiation (Witkin, et al., 1962), the extent to which an individual is able to keep a part of his perceptual experience separate from the rest. Stable individual differences with regard to this cognitive characteristic, psychological differentiation or field articulation, have been repeatedly demonstrated in groups of subjects of various ages, in connection with both of the major research programs mentioned above. Because it appeared possible that subjects differing in this general cognitive style might be inclined to use different kinds of cognitive structures to govern their choices, we decided to include two measures of psychological differentiation in our study.

5. Research on Decision Processes

It would seem that another related line of research is the laboratory investigation of decision and choice processes. We found, however, upon examination of such research reports that, in general, they are not really relevant to our concerns. For one thing, the choices a subject makes in the laboratory are of a rather minor or trivial nature, not really comparable to the life decisions in which we are interested. But, more important, in the laboratory the alternatives are provided for the subject by the experimenter. The aspect of the choice process in which we are most interested is precisely the one which in such experiments is not allowed to vary--namely, the discovery or analysis of what one's alternatives are. Thus a large part of the psychological research classified under the heading of "choice" is not closely related to our present undertaking.

One particular study on decision processes, however, is more closely linked to ours. Brim, Glass, Lavin, and Goodman (1962) constructed a Decision Process Test, consisting of descriptions of four child problems, with several alternative courses of action parents might follow in dealing with each. Several scores were obtained from various aspects of subjects' responses. These were correlated with one another and with personality measures, and the correlations were factor analyzed. From the many detailed results the authors report, the one of particular interest to us was that personality measures, such as manifest anxiety, emotionality, nervousness, and self-confidence, were not related to the decision scores, whereas measures of beliefs and values were. This suggests that the kinds of factors entering into choices of techniques for handling children may be similar to those entering into choices about what one will do with his own life. If this is true we will need to broaden still further the area for which we are seeking to develop theoretical concepts and research techniques.

Thus, influenced by several independent lines of research, psychologists have been shifting their attention from the simple question "What does this person choose?" to the more complex question "Why does he choose it?" or "What cognitive processes govern the choice?" It is to such questions that the research reported here is directed.

CHAPTER 3
PROCEDURES

1. General Plan

Our research undertaking was conceived as an exploratory study that would attempt in several ways to find out how young persons perceive and organize the possibilities within and around them as they initiate plans for the conduct of their lives. For this reason, we did not start with definite hypotheses to be tested, but instead sought to obtain the kinds of information which would generate fruitful hypotheses for future research.

The investigation was set up as a cross-cultural study in order to insure that the inferences we made about the psychological process in which we are interested--the way in which the individual deals with possibilities--would not be based on too narrow a segment of the human race. Besides the cultural factors distinguishing one national group from another, there were three other kinds of distinctions based on social groupings that we thought might be related to the individual differences we were investigating--namely, sex, social class, and religion.

Our procedure was to choose two samples for intensive study in such a way that valid comparisons could be made between nationalities, sexes, and social classes, and between subjects from church and non-church families. Two supplementary samples from very different kinds of families, schools, and communities in the United States were then added so that we could make some judgment as to whether the differences between social groups within a single country were of the same kind and the same magnitude as the cross-cultural differences.

We realized that the level of intellectual development may be an important variable governing any kind of concept formation or concept utilization. In order to take this into consideration, a non-verbal test of general intelligence, the Raven Progressive Matrices Test, was administered to subjects in all the research samples. Because it proved impossible to equate all subgroups on this variable, statistical procedures (analysis of covariance) were used to control it.

Four somewhat independent investigations were carried out. They will be reported in the succeeding sections of this report under the following headings: a) Perception of Possibilities; b) Daily Activities; c) Choice Patterns; d) Values.

2. Communities, Schools, and Samples

The Netherlands community chosen on the basis of consultation with Dutch scholars engaged in education research was Enkhuizen. It is a North Holland city of about 10,000 some 50 miles north of Amsterdam. In the past, before the building of the long dike which transformed the Zuyder Zee into a fresh-water lake, the Ijsel Meer, Enkhuizen was an important seaport, and residents take pride in the city's history. The Zuyder Zee museum, located there, gives a vivid picture of the life of former generations. The population is stable and consists predominantly of the classes we usually label lower-middle and upper-lower--small shopkeepers, bulb-growers, skilled mechanics, and the like. Only a small proportion of the adults have attended a University.

The community has four schools at what they call the post-primary level. (The term "secondary" in the Netherlands is applied only to academic schools preparing graduates for university entrance.) After six years of common primary education, children are channeled into different post-primary schools according to their abilities and their parents' wishes. This is perhaps the most striking difference between the structures of the situations boys and girls in the Netherlands and the United States face. For 14-year-olds in the United States, all paths into the future are still open. For 14-year-olds in the Netherlands, some have already been closed because of decisions made by someone two years before. (The extent to which a boy or girl's own wishes govern this decision was one of the things we explored to some extent in our interviews.)

The plan for the first stage of our research required that we administer a questionnaire and two group tests to all individuals at the school level corresponding to ninth grade in the United States. In order to carry this out, we worked at all four of the post-primary schools in Enkhuizen, the HBS (Hogere Burger School), an academic secondary school, two ULO schools (advanced elementary), one a church school and the other a public school, and a technical school for boys. Students from the Institute of Education at the University of Amsterdam administered the questionnaire and tests, with the senior investigator standing by to supervise the proceedings and answer questions. The Enkhuizen data were collected during the academic year 1962-63.

The American community used for the Dutch-American comparisons was North Bend, Oregon. Its total population is somewhat smaller than Enkhuizen's, approximately 7500, but the number of ninth graders is about the same. It is a port city on the Pacific. Its population, like that of Enkhuizen, is predominantly lower-middle and upper-lower class. The range of occupations, while not identical with that of the Dutch city, is similar, including some farming, some woodworking, and various kinds of small business. Here it was possible to find all young people of this particular age group in the ninth grade of one junior high school.

On the basis of the questionnaire that all members of each group filled out, 174 in Enkhuizen, 191 in North Bend, the subjects were classified in three different ways.

a) Sex

b) Socio-economic status based on father's occupation. Level I, Upper-Middle--professional and managerial; Level II, Lower-Middle--small shopkeepers, clerical workers, and independent farmers; and Level III, Working Class--factory workers, farm laborers, etc.

c) Church vs. non-church status of family. (Only Protestants were included because of the small number of Catholics in these populations.)

Names were then drawn, using a table of random numbers, from each of the subsets produced by this three-fold classification, to fill in the following schema:

	Socio-Economic Level					
	Level I		Level II		Level III	
	Boys	Girls	Boys	Girls	Boys	Girls
Church	4	4	6	6	6	6
Non-Church	2	2	3	3	3	3

Thus the Dutch and American samples each consisted of 48 cases.

The structure of the samples allowed us to use the same independent variables--nationality, sex, social class, and church status[1] with a number of dependent variables.

The median age of the subjects at the time they were tested is very similar for the two samples--14 years, 8 months for the Americans, 14 years, 6 months for the Dutch. The range of ages, however, was greater in the Dutch sample. In Enkhuizen the youngest subject was 13, the oldest 16½. In North Bend, the youngest subject was 14, the oldest 16½.

The supplementary American samples were chosen in a manner designed to maximize whatever differences exist within American society. What will be referred to from here on as the Eugene sample consisted of 12 boys and 12 girls whose socio-economic level was clearly upper-middle or higher. From the school records at the junior high school most likely to enroll children from such families, the names of all children whose fathers' occupations were at the professional-managerial level were obtained. (It was intended that children of University of Oregon professors were excluded since many of them attend this particular school, and we did not wish to have a sample consisting primarily of faculty children. Through an oversight, two of the subjects finally chosen are professor's children, however.) The names of the particular individuals included in this sample were drawn from the total pool using a table of random numbers. No attempt was made to take church status into consideration in this group.

---

[1] After we began the analysis of the data, we decided to eliminate church status as an independent variable. Preliminary comparisons indicated that it was not related significantly to any of the dependent variables. Furthermore, especially in the case of the American subjects, it was impossible to be sure that the classification really represented the amount of religious influence to which a boy or girl had been subject. For example, a girl might indicate on the questionnaire that her family was not affiliated with any church, but tell us later on the Daily Activity Record that she herself spent a good deal of time in church activities. The most sensible course seemed to be to drop this from our list of independent variables.

The environment of the Eugene group differed from that of the previously drawn samples in several other ways. Eugene is a city of about 75,000 with much more diversity in its population than is characteristic of smaller cities. Because the University of Oregon is located in Eugene, all sorts of cultural activities flourish there--lectures, concerts, and the like. The situation is considerably more cosmopolitan than the North Bend one.

The sample referred to from here on as the Portland sample was obtained in a somewhat similar manner. The school records of a four-year high school serving one of the less affluent areas of the city were searched for the names of students coming from specified elementary schools in poor neighborhoods, children whose fathers' occupations (or mothers', in some of these cases) were at the semi-skilled or unskilled level. Achievement test records were then checked to eliminate the names of those whose reading scores were of less than the seventh-grade level. (We estimated that this level of reading ability was necessary for carrying out some of our procedures, particularly the Values Q-sort.) Finally the names of 12 boys and 12 girls (with a few alternates to use if needed) were drawn from the remaining pool of names by means of random numbers. After these subjects had been given the group tests and questionnaires the non-white students were eliminated from the interview sample in order to avoid adding an extra uncontrolled source of variation. (It was not possible to eliminate them until this stage of the proceedings because of Oregon's civil rights law which makes it illegal to enter information about race on official records.)

The environment of the students in this sample also differs from that of the others in several characteristics besides economic level. Portland is a city of about 370,000, with a much more diverse population than any of the other communities. Furthermore, instead of belonging to the highest class in a three-year junior high school, these boys and girls belonged to the lowest class of a large four-year high school.

All of the American data were collected during the academic year 1963-64.

3. Data Collection Procedures

The data to be used in the four different studies to be outlined in the next section and reported in different chapters were collected at the same time according to a predetermined plan. There were two stages, group and individual. In each research location the first stage was a group session. In Enkhuizen and North Bend all members of the ninth grade or its Dutch counterpart participated. In Eugene and Portland a somewhat larger number than the 24 chosen for the final interview sample were involved, but the whole class was not tested.

A. Group Procedures

The instruments used during the first or group phase consisted of a questionnaire and two group tests. The first section of the questionnaire was designed to elicit background information. The subject recorded his name, address, school, sex, birth date, schools previously attended, father's occupation, mother's occupation (present and/or past), amount and kind of education parents had received, names and ages of siblings, and church the family attended, if any.

The second section of the questionnaire, from which the dependent variables for the Perception of Possibilities study were obtained, consisted of a series of pages, blank except for the instructions, upon which the respondent listed occupations, free time activities, persons, and places. Each page was given with a specified time limit. After completing his listing of occupations he knew, the respondent was asked to check those he saw as possibilities for himself. He did this also for free time activities. After completing his lists of persons, he was asked to indicate the category to which each belonged. After completing his listing of places he knew, he was asked to indicate the source of his information. On each page a simple count of the number listed, the number checked, and the number classified under various categories produced the dependent variables to be analyzed in the Perception of Possibilities study. Copies of both the American and the Dutch versions of the questionnaire are included in Appendix A.

During the group session the test of intelligence and one of the tests of cognitive style were also given. The Raven Progressive Matrices Test was administered with Dutch instructions in Enkhuizen and with English instructions in the American schools. This test is a well known non-verbal measure of intelligence frequently used in the Netherlands as well as in English-speaking countries. Evidence for its reliability and validity has been brought together in a number of places, perhaps most conveniently in Buros (1965).

The Figure Drawing Test, as used by Witkin and his coworkers (Witkin, et al., 1962) requires that the subject draw two human figures, one of each sex. These drawings were rated on a five-point scale for sophistication of body concept according to detailed instructions furnished by the Witkin research group. Separate rating scales for adults and for 10-year-old children have been developed. We used the adult form. The Witkin group has shown that these body concept ratings correlate significantly with other measures of field dependence or psychological differentiation and that individual ratings are fairly stable over periods as long as seven years.

Instructions for rating and examples of the types of drawings obtained can be found in Appendix B.

B. Individual Procedures

After the members of each of the special samples had been chosen, an appointment was made with each subject for an individual session about three hours in length.

(1) Interview

The first part of this session was used for a semi-structured interview in which information was obtained about actual choices the subject had made in the past and the plans he was making for the future. In Enkhuizen the choice questions focused on how the selection of post-elementary school had been made. With American subjects the choice questions dealt with decisions about elective courses. In both countries the questions about plans elicited information about the kinds of further education and career the person was considering.

(2) Embedded Figures Test

This is the Witkin adaptation of the original Gootschaldt test. It measures ability to articulate a complex field and maintain separateness of structure under confusing circumstances. Because of its consistent and moderately high correlations with the other measures of field dependence or psychological differentiation, the Tilting Room-Tilting Chair Test and the Rod-and-Frame Test, and because of its use in many research investigations of individual differences in cognitive style, it provides a meaningful index of the field articulation or differentiation variable. The instructions for administering and scoring the test were those recommended by Witkin (1950).

(3) Mann Word Naming Test

This is a procedure developed by Mann (1956) based on the word-naming test from the Stanford-Binet scale, but scored by counting the number of words referring to the immediate situation and the number without such reference. In accordance with the preliminary evidence presented by Mann, we used this test as an indicator of extraversion-introversion.[2] Two trials on each of which the subject was asked to write 25 words, were given.

(4) Choice Pattern Test

The Tyler Choice Pattern Test is a technique for determining both what the subject chooses and rejects and why he chooses as he does. It involves the presentation of a set of individual item cards for the subject to sort into two groups signifying choice or rejection. After this he is instructed to group together items he chooses or rejects for the same reason and to indicate what it is that the items in each of his groups have in common.

For this particular project, the items were prepared by tabulating the frequency with which occupations and free time activities had been listed on the questionnaire described above by the total group of Dutch subjects and by an American ninth-grade group (not one of the samples in the investigation). The items to be included in the Choice Pattern Test were selected from among those listed by at least 10 percent of the Dutch and the American groups. Thus it could be assumed that subjects of this age in both countries were reasonably familiar with them. Each was directly translatable from one language to the other.

---

[2] In order to find out whether this simple procedure actually revealed extraverted or introverted tendencies, we correlated scores our North Bend subjects obtained on it with their Extraversion-Introversion scores on the Myers-Briggs Type Indicator administered during a supplementary testing session. The correlation was low and non-significant. Consequently we did not use these Word-Naming scores in any of our analyses of data. From here on in the report the test will not be mentioned.

The Choice Pattern Test furnishes a number of quantitative and qualitative indices of the cognitive activity entering into the making of choices. These will be explained in more detail in the chapter where results are presented. Tyler (1961) has presented some preliminary evidence that, at least with college students, such indices show adequate test-retest reliability. Appendix C contains lists of items, forms, and instructions for this procedure.

(5) Values Q-Sort

The Sundberg Values Q-sort is made up of two parts--Personal Directions, 40 items, and Personal Assumptions, 50 items. The items were printed on individual cards and presented to the subject with instructions to use seven columns to represent the extent of his agreement with them. The fixed distribution for the 40-item sort was 3, 5, 7, 10, 7, 5, 3; for the 50-item sort it was 3, 6, 10, 12, 10, 6, 3.

These particular items had been selected from a total of over 500 that had been assembled from all the major theoretical and research sources mentioned in the previous chapter and from free responses a group of ninth graders had previously written to the questions "Who are you?" and "What are you?" A number of considerations entered into the choice of particular items--agreement among investigators as to what the item meant, evidence from try-outs that young adolescents could understand the item and decide whether or not they agreed with it, and representation of the major content categories that had emerged from the survey of theory and research.

The cross-cultural comparisons using this technique have serious limitations. The items were translated into the Dutch language and administered to the Enkhuizen sample about a year after the rest of the Enkhuizen data had been collected. At this time only 39 out of the 48 subjects were available for testing. In addition to the inevitable questions about whether the meaning of translations of statements about complex personal opinions is identical with the meaning of the statements in the original language, an additional source of error is involved in the nationality comparisons on values. After the translation had been completed, some modifications were made in the English version to insure that the reading level would be at or below seventh grade. Thus the Dutch-American comparisons which will be presented in the chapter on values must be considered suggestive rather than conclusive.

A detailed account of the procedure used in the construction of the Sundberg Values Q-sort, along with the items themselves and the instructions for administering them, are included in Appendix D.

F. Daily Activity Record

At the close of the individual session, each subject was given a form on which he was asked to record what he did during each half-hour period from 7:00 a.m. to 11:30 p.m. for the four days: Saturday, Sunday, Monday, and Tuesday. The object of this procedure was to obtain information about what subjects actually did with their time on weekend days and school days.

After some preliminary tabulations the researchers agreed on a set of content categories under which the activities reported could be meaningfully classified. Entries were then tabulated for each subject under these headings and the total number of half-hour periods the subject spent on each class of activities during the four days totaled. The categories will be shown in section 5, pages 31 and 32.

A sample of the blank the subject received is given in Appendix E.[3]

4. Preparing Data for Analysis

It was not necessary to translate any of the data obtained from the questionnaire and group tests. With the help of student assistants from the University of Amsterdam, the principal investigator read the background information and made the ratings of family socio-economic level and church status directly from the Dutch responses. In the free response "possibilities" sections of the questionnaire the number of items listed under the various categories could be counted without translation. The Progressive Matrices and Figure Drawing tests, because they were entirely non-verbal, could be scored without regard to the language in which the instructions had been given.

In the case of the interview and Choice Pattern procedures, all protocols were translated by a professional translator's bureau in Amsterdam before they were returned to the United States. A Dutch student assistant translated the entries on the Daily Activity Record.

All numerical scores and indices were then punched on IBM cards to facilitate computer processing.

5. The Four Research Projects in Outline

A. Perception of Possibilities

Question: Are differences in the possibilities individuals see for work, recreation, personal associations, cultural stimuli, and places to live related to sex, nationality, or socio-economic status?

---

[3] A few of the records were not returned or were incorrectly filled out, so that the N's for the analyses involving these variables are somewhat lower than the total numbers in the samples.

Dependent Variables: Number of items listed, checked, and classified under different headings on the free response pages of the questionnaire.

Independent Variables: Sex, location, socio-economic rating based on father's occupation.

Control Variable: Intelligence as measured by Progressive Matrices scores.

Statistical Technique: Analysis of covariance using Progressive Matrices score as the covariate.

General Explanation: There were two main divisions of this project, the Dutch-American comparison, and the Three Cities comparison. For each dependent variable in each of these main divisions, two separate analyses were carried out. One tested the significance of sex, location, and their interaction. The other tested the significance of socio-economic level, location, and their interaction. All analyses were carried out on the IBM 1620 computer at the University of Oregon using a program for analysis of covariance for two independent variables based on the procedure explained in Winer (1962).

B. Daily Activities

Question: Are differences in the uses individuals make of their time related to sex, nationality, or socio-economic status?

Dependent Variables: Number of half-hour periods during four days spent in each of several types of activity. These are Active pastimes, Baby-sitting, Bed (in bed, sleeping, etc.), Chores and housework, Church, Clubs and organizations, Conversation, Dancing and parties, Downtown, Eating, "Goofing off," Homework, Indoor, non-active games, Lessons and practice, Library, Medical-dental, Movies and theatre, Part-time jobs, Personal care, Pets, Quiet pastimes, Radio-phonograph listening, Reading, Religious lessons (at home, etc.), School, School activities, Spectator sports (live), Telephone, Transportation, TV, and Miscellaneous.

Independent Variables: Sex, location, socio-economic rating based on father's occupation.

Control Variable: Intelligence as measured by the Progressive Matrices Test.

Statistical Technique: Analysis of covariance using Progressive Matrices score as the covariate.

General Explanation: In this as in the previous study the two main divisions were maintained, the Dutch-American comparison and the Three Cities comparison.

Only sex and location were used as independent variables in this study.

C. Choice Patterns

There were two main parts of this, first, the analysis of similarities between persons in the items they chose and rejected and, second, the analysis of different kinds of cognitive process reflected in the grouping and labeling of choices and rejections. In addition all samples were compared with one another, item by item, to identify significant differences.

(1) Similarities between Persons

Each person's response (choice, rejection, or omission) to each of the 100 items making up the Occupations and Free Time Activities sections of the Choice Pattern Test was recorded. This pattern of responses was compared with the pattern shown by every other individual in the sample to which he belonged. Thus a matrix of similarity indices for each sample was constructed.

In each sample, the matrix of similarity indices was analyzed by the McQuitty Linkage Analysis procedure (McQuitty, 1957). This produced clusters of persons, each of whom resembled other persons in his cluster more than he resembled any member of another cluster. These clusters were compared with one another on the two independent variables of sex and socio-economic level as well as on the nature of the choices themselves.

The nature of the organization into clusters in each sample was compared qualitatively with the organization shown in other samples.

(2) Cognitive Organization Shown by Groups and Labels

On the basis of an intensive examination of the performance of individuals in the grouping and labeling tasks of the Choice Pattern test, a Check List of Cognitive Characteristics was constructed for Occupations and another for Activities. Each individual Occupations and Activities record in the four samples was then analyzed using this check list. Characteristics expressed in the record were checked in the appropriate rows.

Dutch-American and Three Cities comparisons were then made on check list items. Apparent differences were checked for statistical significance using Chi-square. Persons exemplifying different kinds of cognitive structures, as revealed in check listed items, were also compared on intelligence and on the cognitive style variables, the Embedded Figures scores and Sophistication of Body Concept ratings.

(3) Item Analysis

For each of the four samples, the number of individuals choosing, rejecting, and not reacting to each of the 50 occupations and each of the 50 free time activities was tabulated. Statistically significant differences between samples in proportions were identified.

D. Values

The data obtained from the Q-sorts of the 40 Personal Directions items and the 50 Personal Assumptions items were analyzed in two ways.

(1) Correlations between Items

For the total group of 96 American subjects, inter-item correlations were computed for the Directions Q-sort and for the Assumptions Q-sort. Each of these matrices of inter-item correlations was factor analyzed (principal components method, varimax rotation) to identify the main dimensions of value differentiation in this age group. The dimensions represented by the factors were compared with the original classification used to guide the choice of value statements.

(2) Correlations between Persons

The distributions of item scores produced by each subject's sorting of the items were correlated with one another to produce for each sample, a matrix of inter-person correlations. Each of these matrices was factor analyzed by the principal components method with varimax rotation.

It was intended that the sets of persons identified in this manner would be examined to determine what kinds of values each "type" represented. The relationship of the classification to sex, social class, church status, intelligence, and choice patterns would also be analyzed. Finally the total group structure shown by the classification of subjects in the Dutch sample would be compared with the structure of the American samples. Only a superficial analysis of these particular results has as yet been completed.

Results of the four studies will be presented separately in the four succeeding chapters. In the chapter after these an attempt will be made to synthesize what has been learned from all of them.

CHAPTER 4

ANALYSIS OF DATA AND FINDINGS FROM FIRST PROJECT--PERCEPTION OF POSSIBILITIES

1. Enkhuizen and North Bend Comparisons

The means and the F values obtained from the first comparison of the Dutch and American equated samples on free response variables, an analysis of covariance in which sex and nationality were used as independent variables and variances were adjusted for differences in Progressive Matrices scores, are summarized in Tables 1 and 2. (Standard deviations are given in Appendix F, Table F-1.) Several of the differences between Dutch and American subjects turned out to be statistically significant. Dutch adolescents are more aware of occupational possibilities, American adolescents of possibilities for play or leisure. While the two groups do not differ in the total number of persons they list, Dutch adolescents write the names of more adults than American adolescents do, and American adolescents write the names of more children than Dutch adolescents do. The meaning of the small differences in the lists of cultural figures (persons subjects know of but are not acquainted with) is not obvious. The Dutch are somewhat higher in total number, the Americans in characters from literature. It is interesting to note that the two groups do not differ significantly on several classes of names listed--movie characters, TV characters, government, and sports figures.

The only significant sex difference is in the listing of sports figures. Boys in both countries list more than girls. As in a number of other

Table 1

Means of Equated Samples of Dutch and American Boys and Girls on Items Listed, Checked, or Classified in Free Response Section of Questionnaire

Questionnaire Variable	Dutch Boys Mean N=24	Dutch Girls Mean N=24	American Boys Mean N=24	American Girls Mean N=24
Occupations listed	34.46	36.25	21.50	22.25
Occupations checked	5.17	4.25	5.21	4.67
Free time activities listed	21.54	20.75	24.33	26.46
Free time activities checked	11.62	11.21	14.58	15.29
Total number of persons listed	22.38	23.04	23.67	24.29
Adults listed	6.92	7.04	5.50	4.62
Children listed	15.46	15.29	18.17	19.67
Family members listed	4.58	5.08	4.08	4.08
Cultural figures listed	17.08	18.83	16.12	15.50
Figures from history	2.12	3.21	4.50	2.46
Figures from literature	1.67	1.25	2.79	2.00
Figures from movies	2.46	3.21	3.00	2.75
Figures from television	5.71	6.17	5.17	7.08
Figures from sports	1.96	1.67	3.33	.75
Figures from government	3.12	3.04	3.21	3.04
Figures from other sources	2.33	1.58	.88	.88
Places to live listed	18.42	15.88	17.29	17.71

Table 2

F Values for Analysis of Covariance on Questionnaire Responses for Equated Samples of Dutch and American Boys and Girls

Questionnaire Variable	Nationality	Sex	Interaction
Occupations listed	**56.40	.02	.28
Occupations checked	.10	1.07	.05
Free time activities listed	**8.82	.00	2.14
Free time activities checked	**8.87	.00	.38
Total number of persons listed	3.75	.27	.20
Adults listed	*4.28	.26	.17
Children listed	**10.67	.16	.95
Family members listed	.55	.00	.00
Cultural figures listed	*4.65	.01	.34
Figures from history	2.38	1.29	3.80
Figures from literature	*4.63	2.25	.01
Figures from movies	.01	.14	.55
Figures from television	.05	1.42	.68
Figures from sports	.08	*4.27	3.35
Figures from government	.27	.92	.81
Figures from other sources	3.69	.58	.60
Places to live listed	.48	3.09	*5.79

* $P < .05$
** $P < .01$

comparisons to be reported in later sections, the gap between the sexes is wider in the American group than in the Dutch group.

The only significant interaction occurs on Places Listed. Dutch boys list more than Dutch girls, whereas the difference in the American group is slight but in the opposite direction.

Table 3 summarizes the results of the second analysis of covariance on the Dutch and American equated samples in which socio-economic class and nationality were used as the independent variables. (Means and standard deviations are given in Appendix F, Tables F-2 and F-3.) Only one significant socio-economic difference appears, for Free Time Activities Checked.[1] What it shows is that the higher classes expect to participate in more leisure activities than the lower classes do. The three means for the Dutch sample are as follows: Class 1 (Upper-middle) 14.75; Class 2 (Lower-middle) 10.67; Class 3 (Upper-lower) 9.94. In the American sample also, Class 1 checks more activities than the others do, 16.50, but Class 3 lists more than Class 2, 15.50 as against 13.33. There is a suggestion here that the tradition of a "leisure class" as contrasted with a "working class" is stronger in the Netherlands than in the United States.

There are two minor differences in the nationality comparisons between the F values obtained from the two analyses of covariance. "Total number of adults listed" turned out to be significant at the .05 level in the first round, not significant in the second, "Historical characters" significant at the .05 level in the second round, not in the first. These differences arise from minor changes in the variances produced by the two different classifi-

---

[1] It is to be remembered that subjects had been asked to list all the items they could think of, but to check only those they thought of as possibilities for themselves.

Table 3

F Values for Analysis of Covariance on Questionnaire Responses for Equated Samples of Dutch and American Subjects Grouped into Three Socio-Economic Classes

Questionnaire Variable	Nationality	Class	Interaction
Occupations listed	**52.41	.29	.30
Occupations checked	.04	.60	.62
Free time activities listed	**7.29	2.18	.14
Free time activities checked	**7.34	*3.38	.96
Total number of persons listed	3.36	1.81	.80
Adults listed	3.22	.52	.93
Children listed	**8.70	2.35	1.33
Family members listed	.15	1.97	1.05
Cultural figures listed	*5.53	.45	1.53
Figures from history	*4.09	.36	2.75
Figures from literature	*4.07	1.76	.01
Figures from movies	.00	.08	.53
Figures from television	.01	.01	1.22
Figures from sports	.52	.81	3.06
Figures from government	.07	.62	.31
Figures from other sources	*6.11	3.12	2.59
Places to live listed	.16	.14	.19

* P <.05
** P <.01

cations (sex and socio-economic class). They have no important bearing on the interpretation of the results.

2. North Bend, Eugene, and Portland Comparison

Before attempting to explain what the differences between the Dutch and American groups may mean, let us look at the results obtained from a comparison of the three American groups. It is to be remembered in this connection that the Eugene and Portland samples were not equated to the North Bend sample in any manner except the fact that they contained equal numbers of boys and girls. On the other hand, they were chosen in such a way as to inform us how large the differences between one American setting and another might be. The Eugene boys and girls were from wealthy homes and in the highest class of a metropolitan junior high school. The Portland boys and girls were from poor homes and in the lowest class of a large metropolitan four-year high school.

The means for the three samples on the questionnaire variables are shown in Table 4. (The North Bend means are, of course, the same as those given in the "American" columns of Table 1. They are repeated here to facilitate comparisons.) The F values showing which differences are significant, for sex, for community, or for the interaction between them, are listed in Table 5. (Standard deviations for all subgroups are included in Appendix F, Table F-4.)

What is immediately apparent from even a cursory inspection of Table 5 is the large number of significant differences between communities. An examination of the means in Table 4 shows that in every case one or both of the Eugene groups scores considerably higher than the others. These are the boys and girls from "privileged" families. Their general level of intelligence is higher than that of the other samples, but the influence of

Table 4

Means of North Bend, Eugene, and Portland Samples of Boys and Girls on Items Listed, Checked, or Classified in Free Response Section of Questionnaire

Questionnaire Variable	North Bend Boys Mean N=24	North Bend Girls Mean N=24	Eugene Boys Mean N=12	Eugene Girls Mean N=12	Portland Boys Mean N=12	Portland Girls Mean N=12
Occupations listed	21.50	22.25	31.17	39.17	21.08	28.67
Occupations checked	5.21	4.67	9.83	7.58	5.58	6.50
Free time activities listed	24.33	26.46	29.92	40.25	21.17	29.83
Free time activities checked	14.58	15.29	20.67	29.17	14.50	19.67
Total number of persons listed	23.67	24.29	31.92	43.25	23.75	36.75
Adults listed	5.50	4.62	9.08	12.42	5.75	7.83
Children listed	18.17	19.67	22.83	30.83	18.00	28.92
Family Members listed	4.08	4.08	2.75	6.42	4.33	2.58
Cultural figures listed	16.12	15.50	23.08	33.42	16.92	19.58
Figures from history	4.50	2.46	6.25	7.83	2.58	1.75
Figures from literature	2.79	2.00	3.92	9.08	2.17	4.08
Figures from movies	3.00	2.75	5.08	4.50	3.67	6.58
Figures from TV	5.17	7.08	7.42	8.50	6.50	9.33
Figures from sports	3.33	.75	3.58	1.08	2.58	1.25
Figures from government	3.21	3.04	4.83	7.00	3.17	3.58
Figures from other sources	.88	.88	1.83	9.58	2.08	3.75
Places to live listed	17.29	17.71	18.00	30.58	12.50	16.67

Table 5

F Values for Analysis of Covariance on Questionnaire Responses for Three American Samples, North Bend, Eugene, and Portland

Questionnaire Variable	Communities	Sex	Interaction
Occupations listed	**11.82	*6.56	.89
Occupations checked	**6.78	.51	1.19
Free time activities listed	**10.35	**15.69	1.73
Free time activities checked	**14.60	**10.10	2.20
Total persons listed	**28.99	**35.98	**7.34
Adults listed	**5.34	1.10	.79
Children listed	**10.34	**23.15	*3.93
Family members listed	.21	.34	*3.86
Cultural figures listed	**29.02	**9.42	**6.41
Figures from history	**10.28	.77	1.80
Figures from literature	**5.72	*4.84	*3.46
Figures from movies	2.86	.77	1.83
Figures from television	1.34	3.33	.24
Figures from sports	.06	**11.57	.34
Figures from government	*4.74	1.03	1.13
Figures from other sources	**11.80	**17.27	**10.27
Places to live listed	**18.24	**21.38	**8.71

* $P < .05$
** $P < .01$

this variable on the results was presumably removed through the covariance procedure. The impression of the investigators who tested and interviewed these boys and girls was that they entered into the proceedings with more zest and enthusiasm than other subjects did. Thus it seems likely that the large number of items they listed under each heading reflects a strong motivation to *produce* as much as possible in the time allowed. The large number of occupations and free time activities *checked*, however, probably indicates that these young persons perceive a world of possibilities broader in its scope than the "possibility worlds" of subjects in the other samples.

Table 4 also suggests that the fundamental difference between these samples is not simply socio-economic level. On many of the variables, one or both of the Portland groups score higher than the North Bend groups do. This suggests that a city environment may be a major influence in increasing a young person's awareness of possibilities, regardless of the type of home from which he comes.

Table 5 also points to a considerable number of significant sex differences. An inspection of the means in Table 4 leads to a conclusion that one determiner of these large F's is the amazing *fluency* of the Eugene girls. In eight out of nine comparisons leading to significant F values, Eugene girls averaged higher than all other subgroups--in many instances strikingly higher. However, the sex differences are consistent from community to community, with a few minor exceptions. Girls list more occupations, list and check more free time activities, and list more persons, cultural figures, and places. Only for sports figures is the direction of this difference reversed. In all the samples boys list more names related to sports.

The four interactions that Table 5 shows are significant do not follow any meaningful pattern. The most reasonable conclusion is that they have been produced by some uncontrolled sampling variations from community to community.

3. Implications of the Three Cities Comparison for the Dutch-American Comparison

With so many significant differences between samples drawn from different segments of the population of one American state, is there any evidence that the comparison between the Enkhuizen and North Bend groups reveals true cultural differences between two countries? To answer this question, we computed some proportions from the means in Tables 1 and 4. This serves to correct for the influence of sheer fluency and allows us to look at the two general trends most clearly suggested by the Dutch-American comparison--(a) the orientation toward occupations in the Dutch group and toward free time activities in the American group, and (b) the greater tendency of the Americans to list the names of children rather than adults. Table 6 shows the relevant proportions for the principal variables significantly differentiating the Enkhuizen and North Bend samples. The proportions listed in the first column were obtained by dividing the mean for each group on "Occupations listed" by the sum of the means for "Occupations listed" and "Free time activities listed." The proportions in the second column were obtained by dividing the mean for each group on the variable "Free time activities checked" by the mean on "Free time activities listed." The proportions in the third column were obtained by dividing the mean of each group on "Children listed" by the mean on "Total persons listed."

When we correct in this way for the markedly different overall levels of productivity in the different American samples, we find that the major trends for Dutch-American differences persist. Of all the activities

Table 6

Free Responses Expressed as Proportions
Relevant to Dutch-American Differences

	Occup. Listed / Occup. + Free Time	Free Time Checked / Free Time Listed	Children Listed / Total Persons Listed
Dutch boys	.62	.53	.69
Dutch girls	.62	.55	.69
North Bend boys	.47	.60	.71
North Bend girls	.44	.58	.81
Eugene boys	.51	.69	.72
Eugene girls	.51	.72	.71
Portland boys	.50	.68	.76
Portland girls	.49	.66	.79

they list, a higher proportion are occupations (and a correspondingly lower proportion free time activities) for the Dutch samples than for any of the American samples. Of all the free time activities they list, a smaller proportion are considered personal possibilities for the Dutch than for any of the American groups. Of all the persons they list, a smaller proportion are children (and a correspondingly larger proportion adults) for the Dutch than for any of the American groups. It appears, then, that in spite of the wide variation from sample to sample of the population in the United States, there are actually some differences between the United States and the Netherlands in their attitudes about work and play, children and adults.

4. More Detailed Analysis of Dutch-American Differences

In attempting to understand the nature of the "work vs. play" differences, we tabulated the occupations and free time activities that had been checked as possibilities by the matched Dutch and American groups. The ones checked most frequently can be seen in Tables 7 and 8. Table 7 shows that the Dutch and the American girls produced highly similar lists of occupations considered as possibilities for themselves, whereas the boys' lists of occupations are much less similar. One difference is that a greater variety of occupations is represented in the American boys' list, even though in the absolute number of occupations checked the Dutch and American boys did not differ. A second difference is that more professional titles appear on the American boys' list. Engineer, teacher, architect, scientist, biologist, coach, doctor, forester, and lawyer are all occupations requiring college degrees. The only occupation requiring college preparation on the Dutch list is high school teacher, with the possible addition of pilot and ship captain.

This difference becomes even more noticeable if we look at the

Table 7

Occupations Listed and Checked as Possibilities by Three or More

Boys or Girls in the Dutch or the American Sample

BOYS				GIRLS			
Netherlands	No.	U.S.	No.	Netherlands	No.	U.S.	No.
Carpenter	6	Engineer	9	Nurse	11	Teacher	11
Bench worker	5	Teacher	7	Stewardess	9	Secretary	10
High school teacher	5	Architect	5	Beautician	9	Nurse	8
Electrician	5	Carpenter	4	Nursery teacher	8	Stewardess	6
Pilot	5	Scientist	4	Elementary teacher	6	Beautician	6
Chauffeur	4	Biologist	3	Typist	6	Salesperson in shop	4
Ship captain	3	Coach	3	Child care	5	Doctor	3
Machinist	3	Contractor	3	Doctor	4	Housewife	3
Painter	3	Doctor	3				
		Football player	3				
		Forester	3				
		Lawyer	3				
		Mechanic	3				

Table 8

Free Time Activities Listed and Checked as Possibilities by Five or More Boys or Girls in the Dutch or the American Sample

BOYS				GIRLS			
Netherlands	No.	U.S.	No.	Netherlands	No.	U.S.	No.
Swimming	18	Swimming	18	Swimming	20	Swimming	18
Football	16	Hunting	18	Skating	19	Dancing	17
Skating	15	Basketball	15	Reading	19	Reading	15
Movies	10	Football	15	Sailing	11	Skiing	13
Volleyball	8	Fishing	13	Bicycling	11	Watching TV	12
Sailing	8	Watching TV	12	Dancing	10	Water skiing	11
Dancing	7	Flying	11	Walking	10	Movies	11
Bicycling	7	Movies	11	Volleyball	10	Hiking	9
Watching TV	7	Boating	10	Gym	9	Tennis	9
Basketball	6	Skiing	10	Tennis	9	Basketball	8
Judo	5	Baseball	9	Concerts	8	Bowling	8
Cycle racing	5	Golf	9	Movies	7	Bicycling	7
		Tennis	9	Rowing	7	Parties	7
		Dancing	8	Skiing	5	Baseball	6
		Water skiing	8	Theater	5	Boating	6
		Bowling	7	Sewing	5	Ice skating	6
		Camping	7	Korfball	5	Radio listening	6
		Wrestling	7			Record listening	6
		Pool	6			Roller skating	6
		Hiking	5			Painting	5
		Motorcycling	5			Sewing	5
		Track	5			Soccer	5

individual protocols themselves. Of the 24 American boys, 19 include at least one professional occupation on their lists of possibilities. Of the 24 Dutch boys only five include one or more professional occupations. This is a highly significant difference ($X^2 = 16.33$).

When we turn to the free time activities listed in Table 8, the most noticeable difference is that the American tabulations for both boys and girls cover a wider range of activities. For this variable, it will be remembered, there were also significant mean differences between Dutch and American subjects. The evidence is thus very clear that both boys and girls in the United States expect to participate in a greater number and a larger variety of non-work activities than their Dutch counterparts do.

The "adults vs. children" difference could not be clarified in this manner by tabulating the responses the subjects had given, as these responses consisted of proper names, meaningful only to the person who lists them. The direction of the difference fits in with much that has been written about the importance of the peer group to American adolescents. The impression of many observers that peer influence is somewhat greater in the United States than in Europe gains some support from our findings.

We shall defer any extended discussion of the findings until after the reports on the other three research projects. It can be said at this point that two possible explanations occurred to the investigators. One is that because of the Calvinist tradition still strong in the Netherlands, the "Protestant ethic" upon which Weber and other sociologists have placed so much emphasis, is now more influential there than in the United States, inclining Dutch citizens toward work rather than toward pleasure.

The other is that because Dutch children, after six years of elementary school, are sorted into different upper schools, each leading toward some occupations and away from others, more consideration may have to be given to occupational possibilities at the beginning of what we would call junior high school in the Netherlands than in the United States. The second of these hypotheses, having to do with the structure of the school system, seemed more plausible to us than the first, because it would account for both the greater awareness of occupations, shown by the comparison of means for occupations listed, and the narrower range of occupations considered as personal possibilities, which shows up in Table 7. We shall return to this question of what the differences mean in a later chapter.

CHAPTER 5

ANALYSIS OF THE DATA AND FINDINGS--

DAILY ACTIVITIES

1. Developing a Classification System

The entries in the four-day Daily Activity Record we received from the subjects in the four samples were very diverse, ranging from "pasturing a goat" to "dancing at the Plaid Potato." The first task then became to find a limited number of headings under which we could classify all entries in a manner to facilitate meaningful comparisons. We did this by alternating the process of tabulating the entries on a few blanks under a trial set of category headings with the process of trying these out in making tabulations from a few more blanks and discussing the difficulties we encountered. After modifying the headings to take care of the problems raised in this discussion we repeated the whole process once more. After several such cycles we arrived at what proved to be a reasonably adequate system of classification, that shown in Table 9. It was then possible to tabulate for each individual the number of half-hour periods and fractions of periods he had spent on each of these activities during the four-day interval covered by the record. (Preliminary studies were made to insure that there was a high degree of agreement between tabulators.)

2. Comparison of Enkhuizen and North Bend Equated Samples

The next step in the analysis was to carry through the same sort of analysis of covariance (with the variances adjusted for intelligence differences as measured by the Progressive Matrices) as had been used in

Table 9

Means for Daily Activity Record Variables

Equated Dutch and American Samples

Variable	Dutch Boys Mean N=23	Dutch Girls Mean N=24	American Boys Mean N=23	American Girls Mean N=24
Active pastimes	8.48	4.42	9.22	2.29
Baby-sitting	.00	.29	.09	1.50
Bed (In bed, sleeping, etc.)	22.61	21.33	20.48	19.04
Chores and housework	5.96	11.25	5.17	9.08
Church	2.13	3.12	2.65	3.33
Clubs, organizations	.35	.00	.09	.67
Conversation	1.26	3.38	2.39	2.17
Dancing and parties	1.30	1.21	.00	.33
Downtown	1.83	2.33	1.48	2.67
Eating	15.87	16.25	10.26	9.75
"Goofing off"	.13	.08	1.83	2.29
Homework	9.00	10.79	8.17	10.42
Indoor, non-active games	3.17	1.38	1.00	.92
Lessons and practice	.48	.92	.52	.58
Library	.00	.00	.52	.12
Medical-dental	.04	.00	.17	.12
Movies and theatre	.48	.54	1.48	.71
Part-time jobs	1.96	.62	1.83	.54
Personal care	2.74	3.92	4.00	8.42
Pets	.70	.21	.00	.29
Quiet pastimes	1.78	2.71	.91	1.79
Radio-phonograph listening	3.52	2.42	1.39	2.62
Reading	5.87	8.96	3.00	2.92
Religious lessons (at home, etc.)	.48	.42	.09	.08
School	22.09	19.96	22.65	22.08
School Activities	.00	.00	2.39	.54
Spectator sports (live)	1.52	.04	1.30	1.42
Telephone	.00	.04	.04	.54
Transportation	6.04	8.71	8.91	8.75
TV watching	8.61	4.38	16.43	14.83
Miscellaneous	3.04	2.08	2.83	1.25

Table 10

F Values for Nationality, Sex, and Interaction

Daily Activity Record Variables

Equated Dutch and American Groups

Variable	Nationality	Sex	Interaction
Active pastimes	.61	**17.38	3.06
Baby-sitting	3.70	*6.40	2.52
Bed (In bed, sleeping, etc.)	3.11	.86	.06
Chores and housework	1.01	**9.50	.26
Church	.30	1.21	.01
Clubs and organizations	.77	.25	3.74
Conversation	.01	1.76	2.70
Dancing and parties	*6.25	.08	.20
Downtown	.00	3.33	.59
Eating	**49.18	.01	.57
"Goofing off"	**27.62	.21	.67
Homework	.02	.93	.93
Indoor, non-active games	*4.36	1.34	.69
Lessons and practice	.08	.24	.00
Library	*6.40	2.64	1.46
Medical-dental	2.88	.70	.22
Movies and theatre	2.06	.72	1.06
Part-time jobs	.07	2.51	.10
Personal care	**41.96	**32.30	**15.99
Pets	.77	.29	2.63
Quiet pastimes	1.77	1.59	.06
Radio-phonograph listening	1.78	.28	.20
Reading	**15.92	1.17	.78
Religious lessons (at home, etc.)	*5.15	.07	.08
School	.62	.64	.25
School Activities	**9.20	3.02	*5.58
Spectator sports (live)	2.14	3.41	*5.51
Telephone	*4.50	*5.26	2.40
Transportation	2.28	1.17	1.22
TV watching	**24.44	1.88	.09
Miscellaneous	.58	*6.43	.00

* $P < .05$

** $P < .01$

analyzing the questionnaire responses. The means for Dutch and American boys and girls on these variables are shown in Table 9, the F values in Table 10. (Standard deviations are listed in Appendix G, Table G-1.)

Several significant differences between Dutch and American groups are in evidence. Dutch young people report that they spend more time in eating, indoor games, reading, dancing and parties, and religious lessons. American young people report that they spend more time in "goofing off," library activity, personal care, school activities, telephone conversations, and watching television. Some of these differences are based on very small totals and perhaps do not mean what they seem to mean. "Goofing off" is a phrase that was not used by the Dutch student assistant who translated the Enkhuizen entries into English, and consequently almost no Dutch entries were classified under this heading, which over a four-day period accounted for about an hour of time on the average, for American students. The American overall average for "library activity" was very low, less than a half hour in the four days the record covered. But because the Dutch total was zero, the difference turned out to be significant. It may be that Enkhuizen does not have a public library. The category "school activities" was another instance of zero entries for the Dutch group. This is undoubtedly because their schools do not provide extra-curricular activities as American schools do. In the case of the significant differences in the other direction, "dancing and parties," the averages for the American boys and girls seem unnaturally low. This may mean only that there was not much social activity at the North Bend school during these particular weekends. For "religious lessons," while Dutch means are higher than American, all are extremely low.

The rest of the nationality differences warrant more attention. "Personal care" covers activities such as washing, bathing, setting one's hair, etc. American teen-agers spend more time on such activities than Dutch teen-agers. The totals for "telephone" are low, but American girls spend considerably more time on such conversations than do any of the other three groups. Both boys and girls in North Bend spend a great deal more time watching TV than their Dutch counterparts do. The higher Dutch scores for "eating," "indoor games," and "reading" probably indicate that Dutch boys and girls spend more time in their own and their friends' homes than American boys and girls do. ("Eating" includes "coffee drinking," a popular activity in the Netherlands even for 14-year-olds.) Perhaps this is one of the reasons they list more adults when asked to write the names of persons they know.

The significant sex differences were mostly what one would expect to find. Girls spend more time than boys in "baby-sitting," "chores and housework," "personal care," and "telephone." Boys spend more time than girls on "active pastimes" and "miscellaneous" activities (a variety of unclassifiable things).

There were two significant interactions. Dutch boys spend more time on "live spectator sports" than Dutch girls do; in the American group, the direction of the difference is reversed, although the two averages are not far apart. Perhaps the location of much of the sports activity at school in the United States but not in Holland makes it natural for more girls to watch such sports in the United States. On the "personal care" item the significant interaction arises from the fact that American girls spend much more time on this than American boys, whereas Dutch girls spend only a little more time than Dutch boys.

3. Comparisons of North Bend, Eugene, and Portland Samples

There were not so many significant differences between the three

American samples as between the equated Dutch and American groups. Tables 11 and 12 show these means and F values. (The standard deviations are listed in Appendix G, Table G-2.) On "quiet pastimes" the Portland group averaged highest, the Eugene group lowest. On "telephone" the ranking from high to low was Eugene, Portland, North Bend. On "part-time jobs" it was Portland, Eugene, North Bend; on "movies and theatre" Portland, North Bend, Eugene. On "live spectator sports," the North Bend group was the only one reporting anything, and their total was small. There is no clear pattern in these differences. Some, like the prevalence of part-time jobs in Portland, would be expected because of the lower economic status of this group. The others do not suggest any obvious meaning. They appear not to be related to the socio-economic difference.

As usual, a number of sex differences turned up. Girls reported spending more time on "baby-sitting," "chores and housework," "clubs," "downtown" (shopping, window shopping, etc.), "personal care," and "dancing and parties." Boys report more "active pastimes." These are about what we would expect the sex differences to be. We should perhaps keep in mind the fact that here as in the analysis of questionnaire data the sex differences show up more sharply in the American samples than in the Dutch samples. We shall return to this point in a later chapter.

The only significant interaction in these comparisons of the three communities occurred on the item "pets," and the totals were so small that it is hardly worth considering. All that the figures really show is that some time is devoted to pets among Eugene boys, almost none among any of the other subgroups.

We shall defer any further discussion of what any of these differences mean until the results of the other projects have been presented.

Table 11

Means for Daily Activity Record Variables

Three American Samples

Variable	North Bend Boys Mean N=23	North Bend Girls Mean N=24	Eugene Boys Mean N=11	Eugene Girls Mean N=11	Portland Boys Mean N=8	Portland Girls Mean N=10
Active pastimes	9.22	2.29	16.45	1.91	11.75	2.00
Baby-sitting	.09	1.50	.27	1.91	.00	2.70
Bed (In bed, sleeping, etc.)	20.48	19.04	20.82	20.09	21.88	17.90
Chores and housework	5.17	9.08	2.91	7.64	4.00	11.80
Church	2.65	3.33	1.27	2.64	.62	1.20
Clubs, organizations	.09	.67	.00	4.00	.00	1.00
Conversation	2.39	2.17	2.00	2.91	.50	4.50
Dancing and parties	.00	.33	.55	1.64	.00	1.50
Downtown	1.48	2.67	.55	1.82	1.00	3.10
Eating	10.26	9.75	10.36	9.09	12.25	10.30
"Goofing off"	1.83	2.29	3.18	1.82	.38	2.40
Homework	8.17	10.42	9.09	10.73	6.25	5.60
Indoor, non-active games	1.00	.92	.82	.00	.25	.50
Lessons and practice	.52	.58	1.00	2.45	.00	.40
Library	.52	.12	.27	.45	.00	.50
Medical-dental	.17	.12	.00	.45	.00	.00
Movies and theatre	1.48	.71	1.55	.00	3.12	3.00
Part-time jobs	1.83	.54	2.09	.82	11.75	1.80
Personal care	4.00	8.42	3.55	6.36	3.25	9.60
Pets	.00	.29	.55	.09	.00	.20
Quiet pastimes	.91	1.79	.18	2.82	3.25	2.90
Radio-phonograph listening	1.39	2.62	.91	1.64	1.50	1.70
Reading	3.00	2.92	2.64	4.91	.75	1.40
Religious lessons (at home, etc.)	.09	.08	.00	.00	.00	.10
School	22.65	22.08	25.82	24.73	21.12	23.40
School activities	2.39	.54	1.55	1.27	.00	.10
Spectator sports (live)	1.30	1.42	.00	.00	.00	.00
Telephone	.04	.54	.27	2.00	.38	1.50
Transportation	8.91	8.75	8.09	9.91	8.75	10.90
TV watching	16.43	14.83	13.82	6.64	14.00	9.10
Miscellaneous	2.83	1.25	1.64	2.18	4.75	1.30

Table 12

F Values for Community, Sex, and Interaction

North Bend, Eugene, and Portland

Variable	Community	Sex	Interaction
Active pastimes	1.62	**47.82	2.19
Baby-sitting	.39	**14.11	.68
Bed (In bed, sleeping, etc.)	.15	1.65	.36
Chores and housework	1.36	**18.43	.85
Church	2.59	1.38	.11
Clubs, organizations	1.86	*6.28	2.11
Conversation	.09	3.76	2.56
Dancing and parties	1.52	*4.88	.63
Downtown	1.56	*4.75	.09
Eating	1.59	3.43	.25
"Goofing off"	.95	.35	2.44
Homework	1.52	.24	.80
Indoor, non-active games	1.17	.41	.74
Lessons and practice	.98	.84	.43
Library	.02	.10	1.00
Medical-dental	.72	1.09	1.78
Movies and theatre	**5.01	1.68	.42
Part-time jobs	**6.38	**8.88	*4.14
Personal care	1.88	**47.14	2.38
Pets	1.31	.02	*3.28
Quiet pastimes	*3.44	2.40	1.93
Radio-phonograph listening	.42	1.71	.01
Reading	1.32	.59	.43
Religious lessons (at home, etc.)	.62	.13	.14
School	2.23	.05	.60
School activities	3.07	.85	1.35
Spectator sports (live)	*4.23	.01	.12
Telephone	*3.16	**14.64	1.54
Transportation	.24	1.45	.54
TV watching	1.43	3.28	.33
Miscellaneous	1.14	2.98	1.71

* P <.05
** P <.01

CHAPTER 6

ANALYSIS OF DATA AND FINDINGS FROM THIRD PROJECT--CHOICE PATTERNS

1. Linkage Analyses to Identify Clusters of Similar Persons

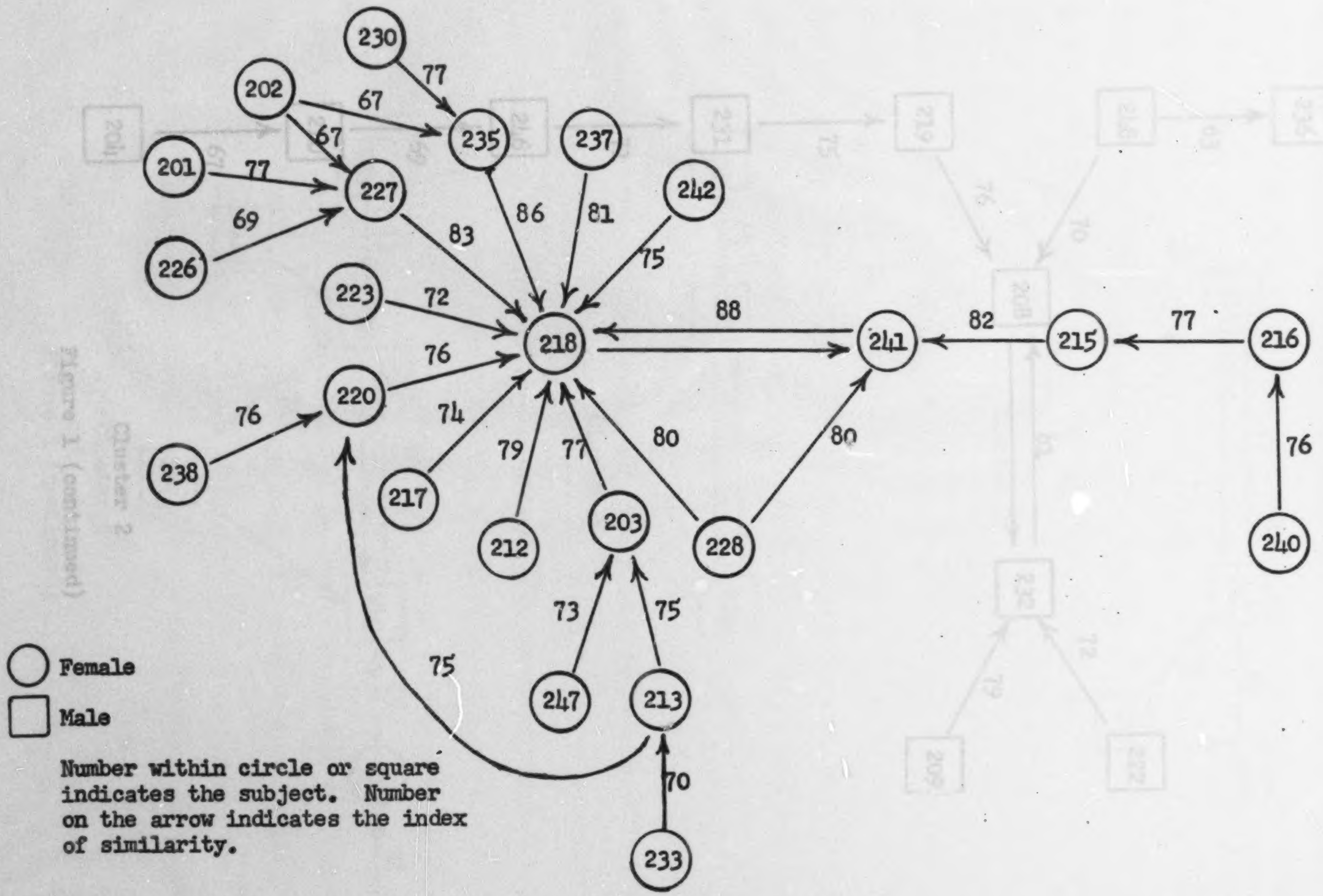
The first thing each subject is asked to do in the Choice Pattern Test is to place on one side of the board before him those items "that you can see as possibilities for a person like you" and on the other those items "that you think of as out of the question for a person like you." He is permitted to relegate to a neutral class any item to which he cannot react positively or negatively. This basic classification of occupations and free time activities into the three categories--positive, negative, or neutral--produced the data upon which the linkage analysis now to be reported was based.

The questions to which the analysis was directed were: (a) Upon what psychological factors do similarities among persons rest? and (b) are these factors the same in different countries and different communities within the same country? The investigators also hoped that the linkage analysis procedure might provide a practical way of sorting subjects into clearly separated types so that in subsequent research studies this type classification could serve as an independent variable.

The first step in the analysis was to compare each person's responses to the 100 items (50 occupations, 50 free time activities) with every other person's responses, recording for each comparison the total number of similarly classified items. The outcome of this series of comparisons, carried out by computer, was a matrix of similarity indices for each of our four samples.

The next step was to analyze each of these matrices using the technique of linkage analysis outlined by McQuitty (1957). In using this technique, one first locates the two persons connected by the highest index of similarity. The indices showing how similar every other person is to each of these individuals are then systematically scanned. Each individual who is more similar to one of these first two than to anyone else in the group is assigned to the first cluster. Following this, the same scanning procedure is used to identify other individuals who are more similar to those just added to the cluster than to anyone else in the group. Each time a new person is added to the cluster, another search is made for persons who may be linked to him. A point is eventually reached, however, when there are no further candidates for Cluster 1. The whole procedure then starts over again with the single highest similarity index remaining in the matrix after the rows and columns corresponding to persons assigned to Cluster 1 have been deleted.

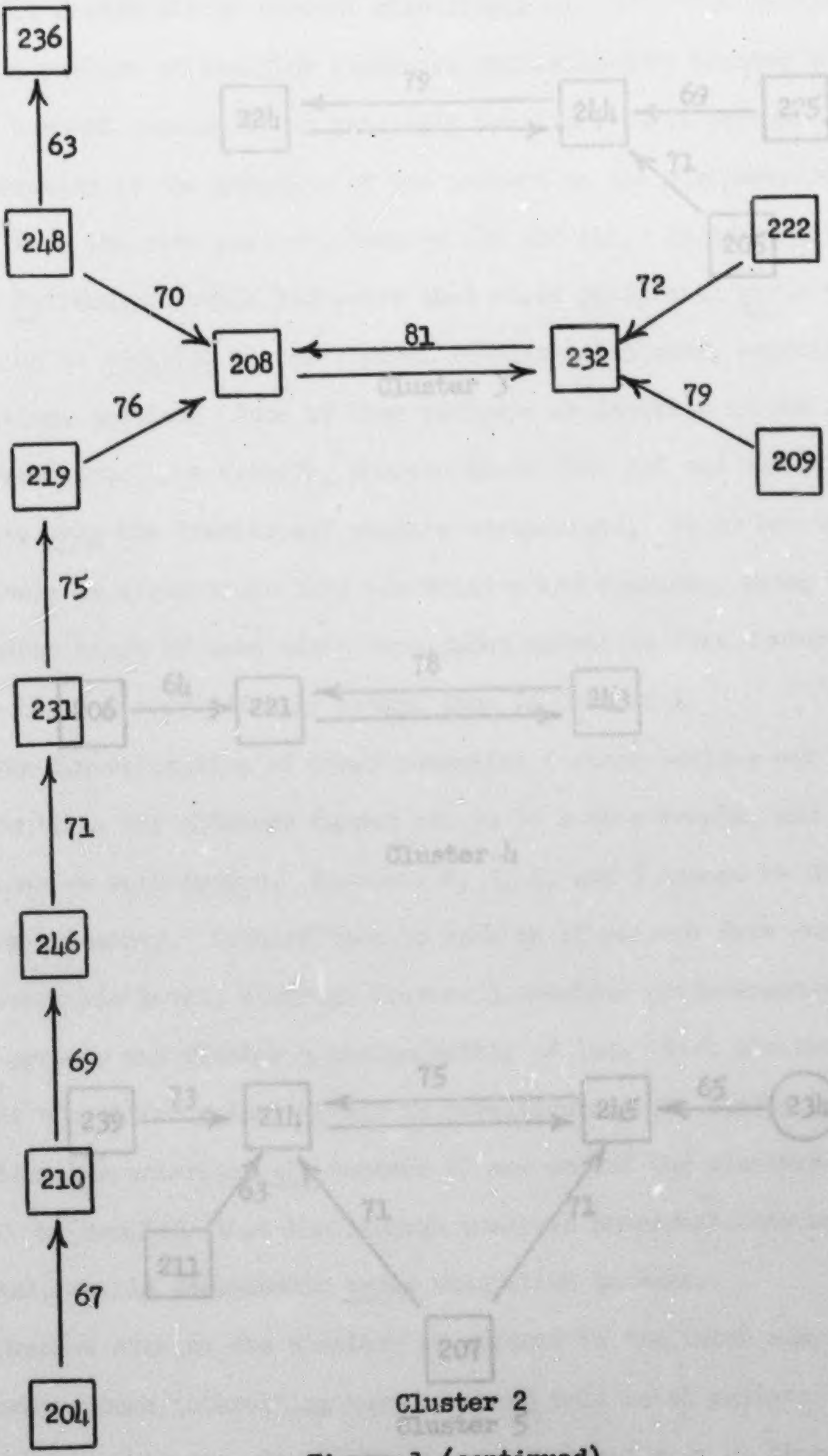
Figure 1 shows the outcome of the linkage analysis of the North Bend sample. The first thing one sees in inspecting these charts is that sex is an important determiner of the similarities. The first cluster consists entirely of girls, and 23 of the 24 girls in the sample belong to it. In contrast to this one big cluster of girls, the boys divide themselves into four separate clusters. This fact, and the fact that the highest similarity indices are found in Cluster 1, suggest that girls resemble one another more closely than boys do. This, of course, is what the extensive research based on the Strong Vocational Interest Blank would have led one to expect. It is common knowledge among users of the test that the great majority of


230
202
201
226
235
237
227
242
223
218
241
215
216
220
238
217
212
203
228
240
247
213
233
77
67
67
77
69
86
81
83
75
72
76
74
79
77
80
80
88
82
77
76
73
75
75
70
Female
Male

Number within circle or square indicates the subject. Number on the arrow indicates the index of similarity.

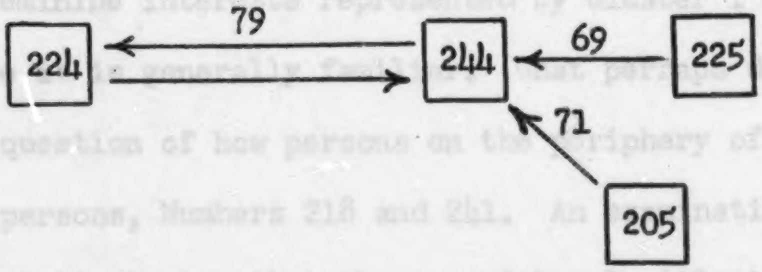
Cluster 1

Figure 1. Clusters of persons identified through linkage analysis of similarity indices based on Choice Pattern responses. (North Bend Sample) Figure 1 continued on next page.

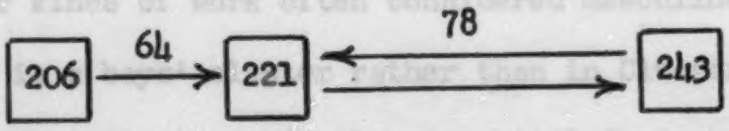

236
63
248
70
208
81
232
72
222
79
209
76
219
75
231
71
246
69
210
67
204

Cluster 2

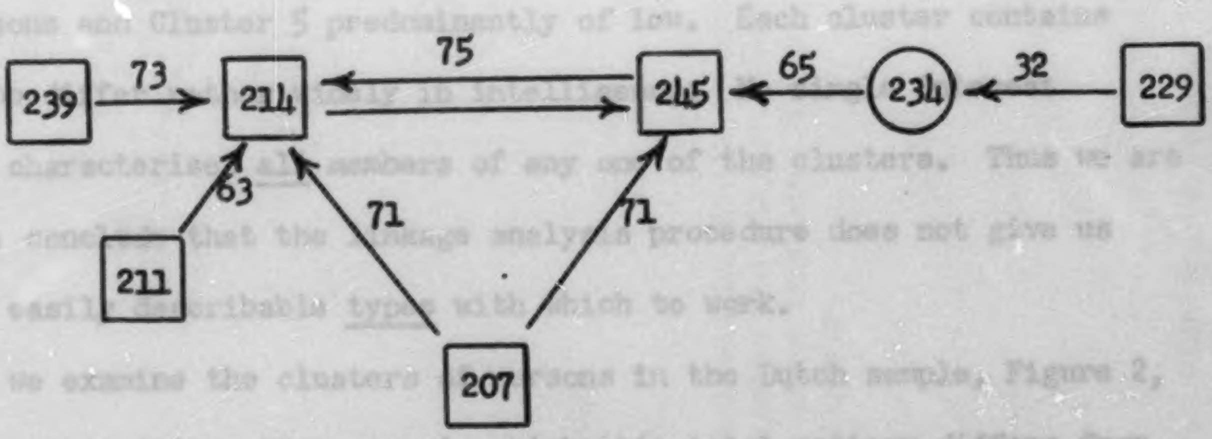
Figure 1 (continued)


224
79
244
69
225
71
205

Cluster 3


206
64
221
78
243

Cluster 4


239
73
214
75
245
65
234
32
229
63
71
71
211
207

Cluster 5

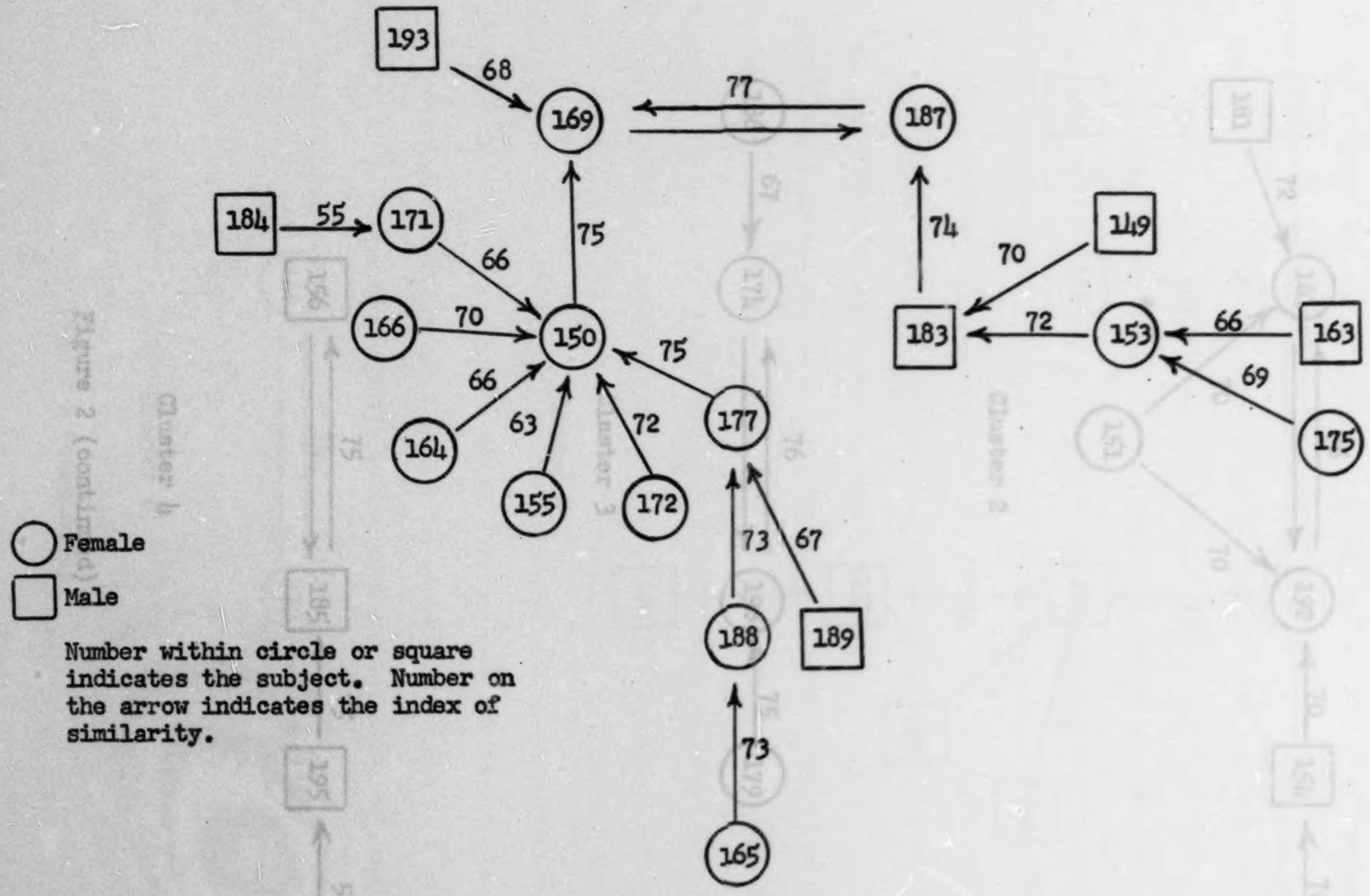
Figure 1 (continued)

women show a uniform pattern of typical feminine interests, whereas men's interests branch off in several directions.

The pattern of feminine interests represented by Cluster 1 requires little comment because it is generally familiar. What perhaps deserves some consideration is the question of how persons on the periphery of the cluster differ from the core persons, Numbers 218 and 241. An examination of their Choice Pattern protocols indicates that these peripheral girls tend to show something in addition to the typical feminine attitudes, especially in the occupations section. Some of them indicate an interest in one or more of the professions, for example, whereas girls like 218 and 241 see as possibilities only the traditional women's occupations. It is because she reacted positively to occupations like electrician and engineer, along with a great many other kinds of work often considered masculine that Number 234 turned out to be in a boys' cluster rather than in Cluster 1.

The identification of other essential factors besides sex that serve to differentiate the clusters turned out to be a more complex and difficult task than we anticipated. Clusters 2, 3, 4, and 5 cannot be described in any simple manner. Each of them is made up of persons from more than one socio-economic level, although Cluster 3 consists predominantly of high level persons and Cluster 5 predominantly of low. Each cluster contains persons who differ rather widely in intelligence. No single interest direction characterizes all members of any one of the clusters. Thus we are forced to conclude that the linkage analysis procedure does not give us clearcut, easily describable types with which to work.

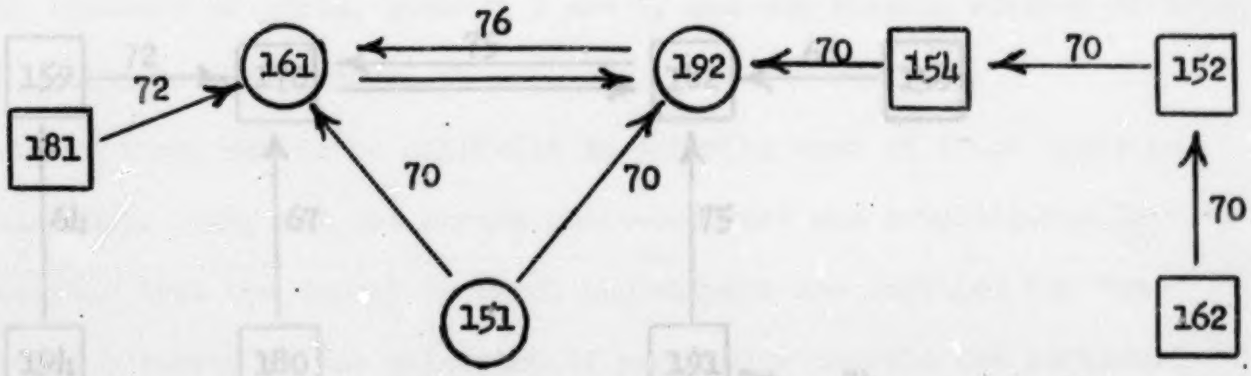
When we examine the clusters of persons in the Dutch sample, Figure 2, we discover some interesting ways in which this total pattern differs from the American pattern. First of all, sex does not show up so conspicuously


193
68
169
77
187
184
55
171
66
75
74
70
149
166
70
150
183
72
153
66
163
75
69
66
63
72
177
175
164
155
172
73
67
188
189
73
165
Female
Male

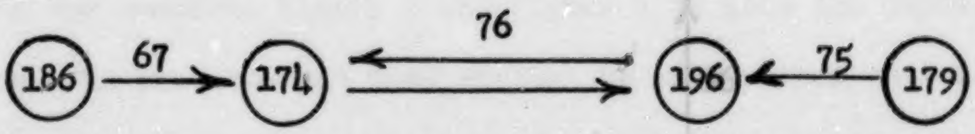
Number within circle or square indicates the subject. Number on the arrow indicates the index of similarity.

Cluster 1

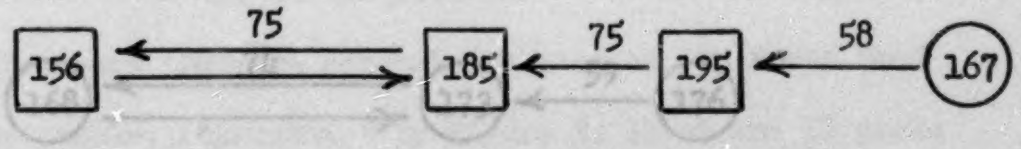
Figure 2. Clusters of persons identified through linkage analysis of similarity indices based on Choice Pattern responses. (Enkhuizen Sample) Figure 2 continued on next page.


76
161
192
70
154
70
152
72
181
70
70
70
151
162

Cluster 2

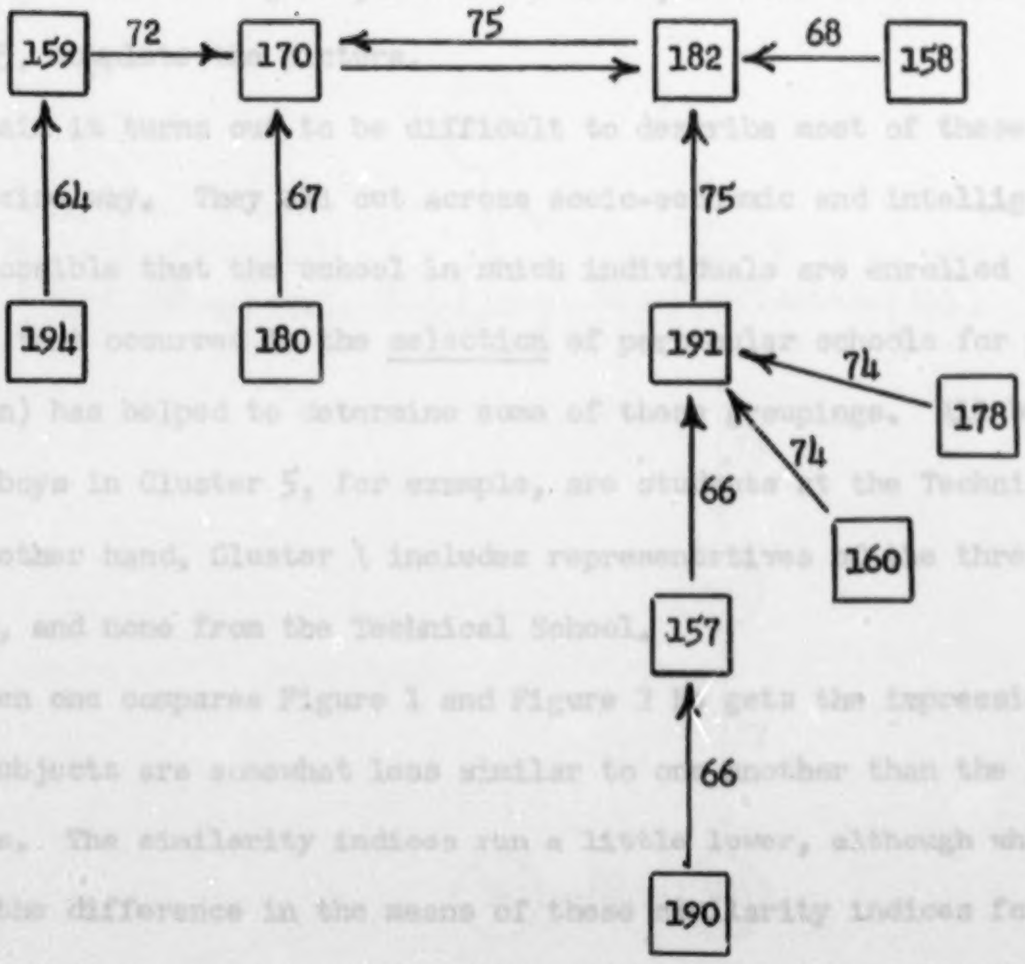

76
186
67
174
196
75
179

Cluster 3

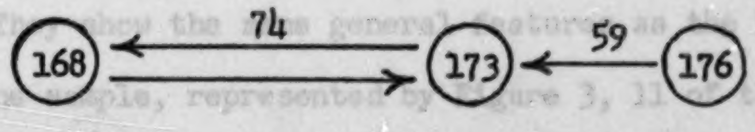

75
156
185
75
195
58
167

Cluster 4

Figure 2 (continued)


159
72
170
75
182
68
158
64
67
75
194
180
191
74
178
74
66
160
157
66
190

Cluster 5


168
74
173
59
176

Cluster 6

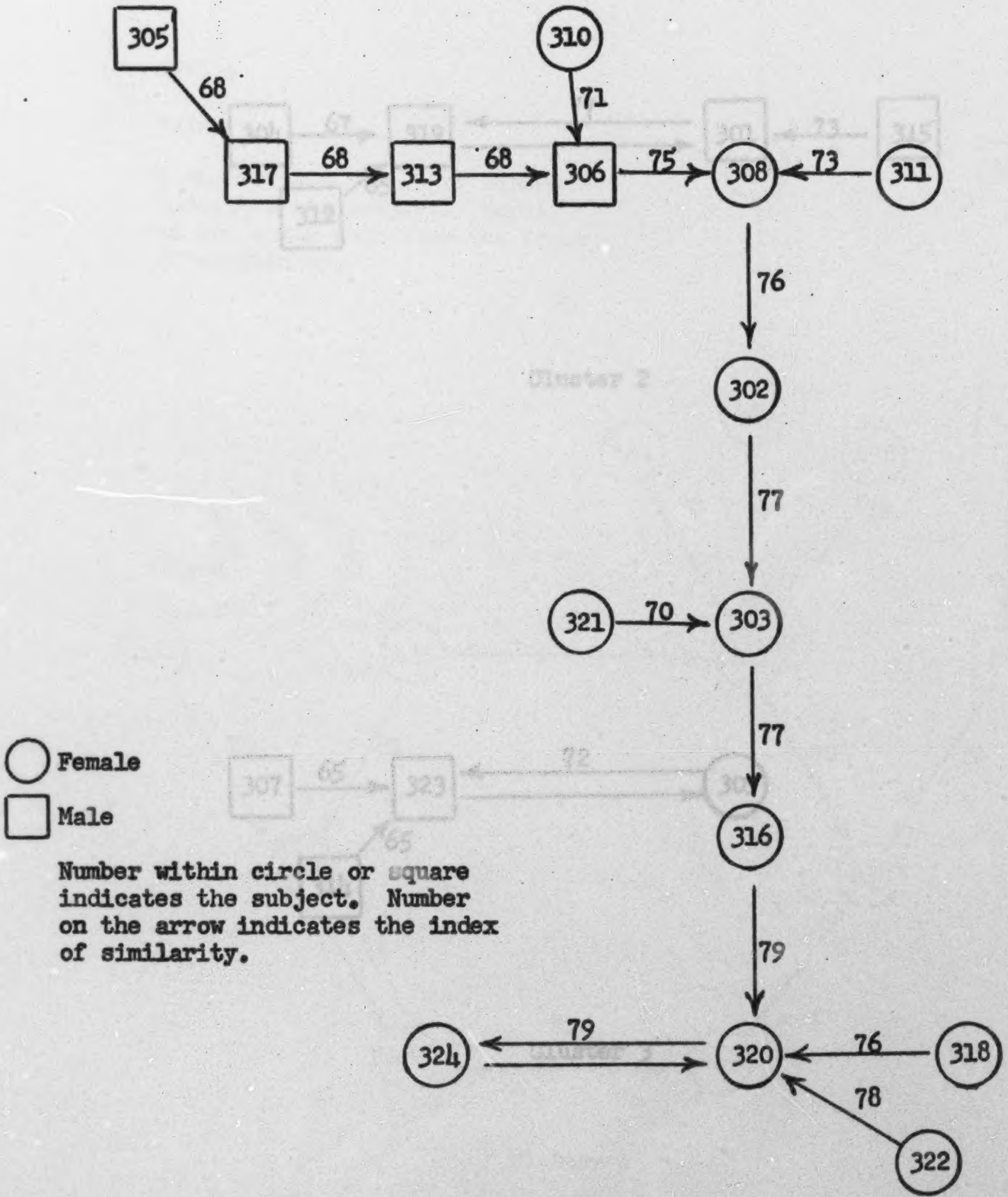
Figure 2 (continued)

as a factor differentiating the clusters. Cluster 1, the largest, consists of 13 girls and 6 boys. Clusters 2 and 4 also include persons of both sexes. Two small clusters of girls, numbers 3 and 6, and one sizable cluster of boys, number 5, complete the picture.

Again it turns out to be difficult to describe most of these types in any precise way. They all cut across socio-economic and intelligence levels. It is possible that the school in which individuals are enrolled (or the sorting that occurred in the selection of particular schools for particular children) has helped to determine some of these groupings. All but two of the 11 boys in Cluster 5, for example, are students at the Technical School. On the other hand, Cluster 1 includes representatives of the three remaining schools, and none from the Technical School.

When one compares Figure 1 and Figure 2 he gets the impression that the Dutch subjects are somewhat less similar to one another than the American subjects. The similarity indices run a little lower, although when we tested the difference in the means of these similarity indices for the equated Dutch and American groups, the difference turned out not to be significant. The Dutch sample produced six clusters as compared with the five obtained from the American sample. But perhaps the most salient finding is that sex differences are less prominent in Enkhuizen than in North Bend.

We will not comment in detail on the patterns found in the supplementary American samples. They show the same general features as the North Bend group. In the Eugene sample, represented by Figure 3, 11 of the 12 girls appear in Cluster 1, but this time four boys are attached to the periphery of this first cluster. Clusters 2 and 3 consist entirely of boys except for Number 309, the one girl outside Cluster 1. In the Portland sample, represented by Figure 4, again all of the girls appear in the large first

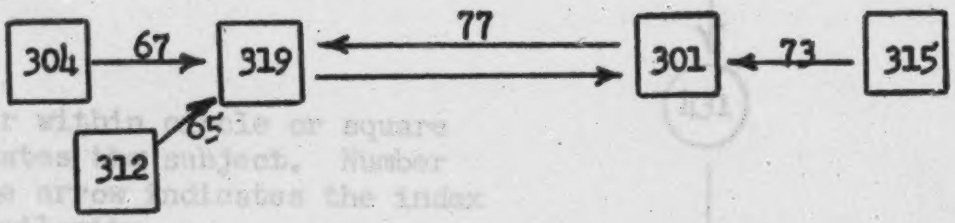

305
68
317
68
313
68
306
310
71
75
308
73
311
76
302
77
321
70
303
77
316
79
320
324
79
76
318
78
322
Female
Male

Number within circle or square indicates the subject. Number on the arrow indicates the index of similarity.

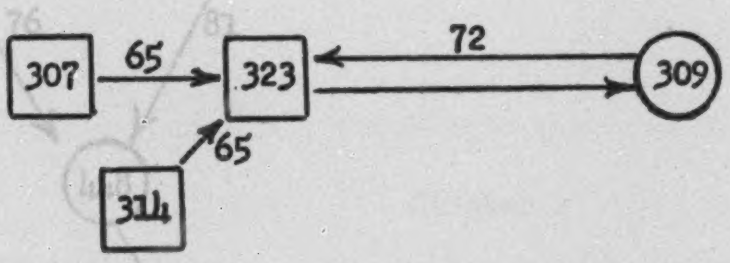
Cluster 1

Figure 3. Clusters of persons identified through linkage analysis of similarity indices based on Choice Pattern responses. (Eugene Sample)

Figure 3 continued on next page.

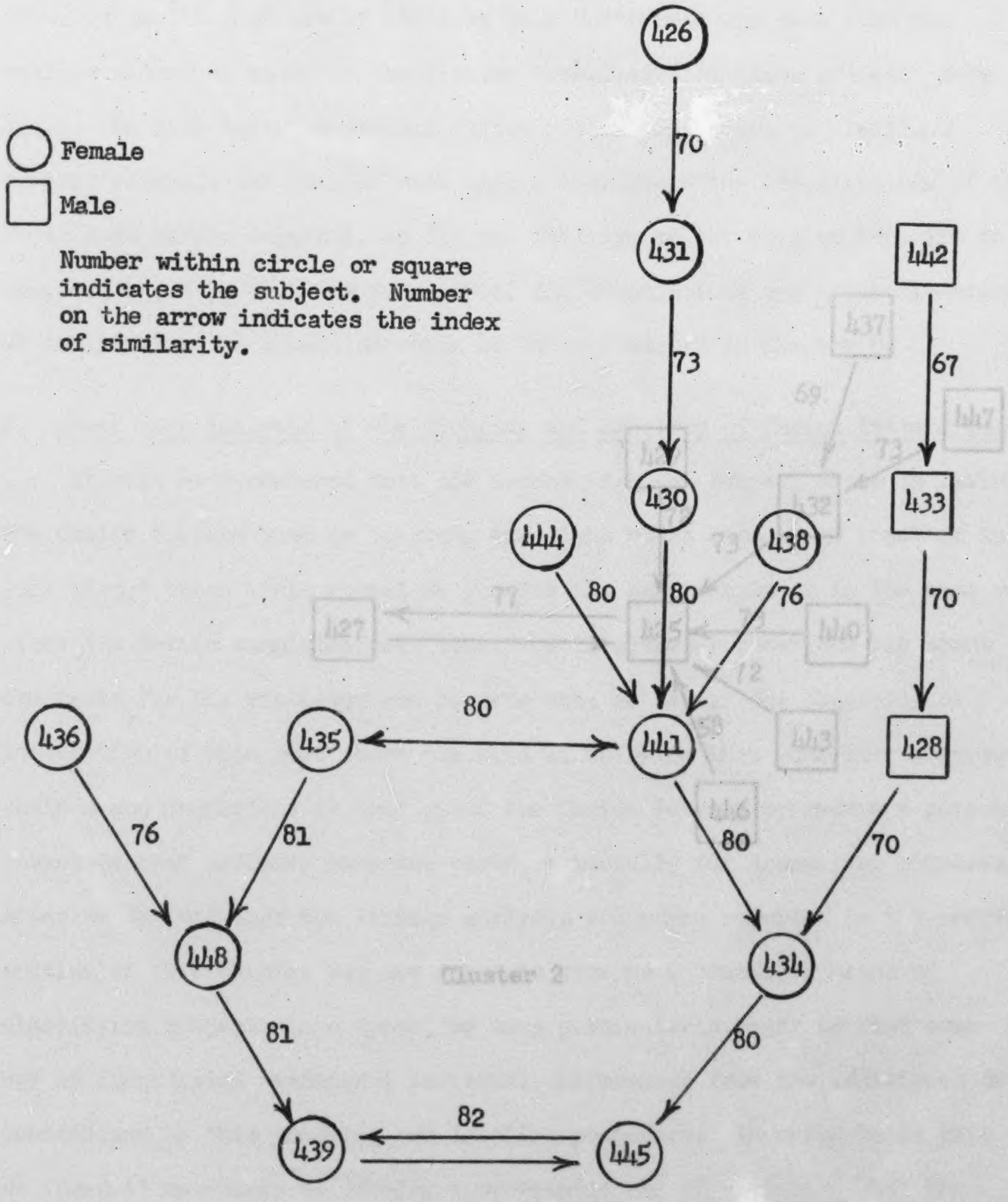

304
67
319
77
301
73
315
65
312

Cluster 2


307
65
323
72
309
65
314

Cluster 3

Figure 3 (continued)

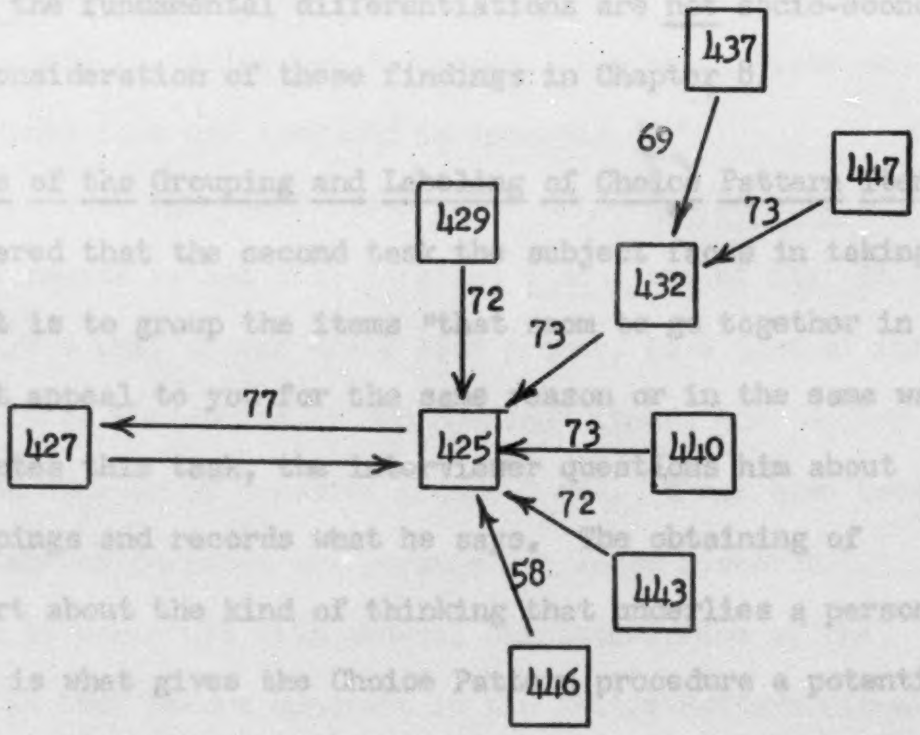

Female
Male
426
70
431
73
430
442
67
433
70
428
444
80
80
438
76
436
435
80
441
76
81
80
70
448
434
81
80
439
82
445

Number within circle or square indicates the subject. Number on the arrow indicates the index of similarity.

Cluster 1

Figure 4. Clusters of persons identified through linkage analysis of similarity indices based on Choice Pattern responses. (Portland Sample)

Figure 4 continued on next page.


437
69
447
73
429
432
72
73
427
77
425
73
440
72
58
443
446

Cluster 2

Figure 4 (continued)

cluster, with three boys linked to its periphery. The only other cluster consists entirely of boys. The fact that the Portland and Eugene samples produced smaller numbers of clusters than North Bend may come from the smaller number of cases or the greater homogeneity of these groups. Here again, the fact that the overall structures of the Eugene and Portland samples resemble one another more than either resembles the structure of the North Bend sample suggests, as did the findings of the studies reported in Chapters 4 and 5, that the fundamental differentiations are not socio-economic. We shall return to a consideration of these findings in Chapter 8.

2. Check List Analysis of the Grouping and Labeling of Choice Pattern Items

It will be remembered that the second task the subject faces in taking the Choice Pattern Test is to group the items "that seem to go together in your mind," those "that appeal to you for the same reason or in the same way." After the person completes this task, the interviewer questions him about the basis for his groupings and records what he says. The obtaining of information of this sort about the kind of thinking that underlies a person's choices and rejections is what gives the Choice Pattern procedure a potential advantage over ordinary interest tests, especially for counseling purposes. After we decided that the linkage analysis procedure reported in the previous section of this chapter was not going to give us a practical means of classifying subjects into types, we were particularly eager to find some way of identifying meaningful indiviual differences from the additional data contributed by this grouping and labeling procedure. In order to do this we found it necessary to develop a systematic way of analyzing what the subjects had said about the items they had grouped together.

We decided to construct a check list upon which it would be possible to indicate whether or not evidence for each particular kind of thinking in which we were interested was present in a given subject's protocol. Previous work with the Choice Pattern procedure, in which qualitative descriptions of individuals had been written (Tyler, 1961), served to guide us in the construction of such a check list. Preliminary forms for Occupations and Free Time Activities were tried out by several members of the research staff, discussed, and revised. This sequence was repeated several times, until we arrived at forms with which we were satisfied.[1] Concurrently with these revisions of the check lists themselves, detailed manuals of instructions were written, to guide users in making the judgments. The check lists and instructions in their final form are included in Appendix C.

The different sections of the check lists cover different aspects of the choice pattern performance rather than parallel dimensions of it. At the beginning, not really a part of the check list proper, is a list of things that can be counted, such as the number of "No opinion" items, the "Number of positive groups," the "Number of negative groups," etc. These have been included mainly for reference purposes and perhaps for later research.

The second section is concerned with general characteristics of the individual's thinking, as they become apparent in the Choice Pattern situation--evidences of uncertainty and evidences of lack of sophistication in conceptual structure. The third section is headed Choice Strategies, the fourth section Values, and the fifth section Interests. It was in making the judgments required by the check list that we found the distinction between "interests" and "values," as elaborated in the first chapter, most useful. The items under each of these main headings on the check list will be explained in more detail in connection with the findings to be reported.

---

[1] Informal checks of the amount of agreement between different scorers independently filling out check lists for the same protocol indicated agreement on more than 90 percent of the decisions about whether or not to check an item. As yet no formal inter-scorer reliability determination on a considerable number of cases has been made. This, of course, will need to be accomplished before the check list is made available to other users.

A. General Structure--Numerical Indices

The only ones of these to be analyzed so far are "Number of positive items," "Number of negative items," and "Number of no opinion items." These were processed by an analysis of covariance (Progressive Matrices scores as covariate) in the same manner as the Possibilities variables. For Occupations a nationality difference significant at the .01 level was found for "Number of positive items" indicating that the Dutch subjects placed on the positive side fewer of the 50 items presented to them than did the equated American sample. There was also a sex difference significant at the .05 level indicating that girls chose fewer of the occupations than boys. The means for number of occupations chosen (placed on the positive side) were as follows:

Dutch boys	14.25
Dutch girls	13.42
American boys	21.46
American girls	15.25

A significant nationality difference in the opposite direction was indicated for the "Number of negative items," but the sex difference for this was not significant. There were no significant differences of any kind on "No opinion items."

At first glance it seems a little strange that the Dutch subjects, who had been able to list many more occupations as free responses than the American subjects, should have chosen significantly fewer when presented with this set of 50 occupations. However, it is not improbable that the same factors account for both results. The fact that the typical Dutch boy or girl is familiar with a larger number of occupations may make it possible for him to be more selective about those he considers for himself.

The comparisons for Free Time Activities on "Number of positive items" and "Number of negative items" clearly point in the same direction as did the comparisons in the Possibilities study. American subjects choose a significantly larger number of these activities than Dutch subjects do, although the difference is not great and is significant only at the .05 level. (Means, standard deviations, and F values for these Choice Pattern variables can be found in Appendix H, Tables H-1, H-2, and H-3.)

It is of some interest that none of the comparisons of the three American samples for number of occupations or free time activities chosen, rejected, or reacted to neutrally produced any significant differences. In spite of their differing characteristics and situations, students in North Bend, Eugene, and Portland show very similar means. This finding makes it appear more likely that the differences between Dutch and American samples are true nationality differences, not just sampling fluctuations.

B. General Characteristics of Thinking

When we began to scrutinize carefully the ways in which our subjects had grouped the Choice Pattern items and the explanations they had given for those groupings, we were impressed by the evidence that many of them were using concepts that might be characterized as "global," "primitive," or "immature." After some discussion as to how best to analyze this phenomenon, we decided to check the occurrence of four particular characteristics under the general heading "Evidence of lack of sophistication in conceptual structure." The details about these four check list items and how we judged them can be found in Appendix C. Here we shall simply report the results of the analyses we carried out after we had completed the check list for each person. First of all, we counted the number of persons in each of our four samples who exhibited to any degree these "primitive" or "immature" kinds of concepts. Here none of the differences between groups were significant. All samples showed this kind of thinking to some degree.

What interested us most was to determine whether these tendencies we were interpreting as deficiencies in conceptual thinking (e.g., grouping together "Stewardess," "Pilot," and "Mechanic," explaining that they all have something to do with airplanes) were evidence of inadequacies in the general level of psychological differentiation as this is measured by the Witkin techniques, the Embedded Figures Test, and the Sophistication of Body Concept score from the Figure Drawing test. The constructs seemed similar. Separating a figure from a confusing context might well require the same sort of psychological ability as separating the essential qualities of occupations from the complex of factors one observes in people working in various situations and settings. We hypothesized that persons who were free from these "primitive" modes of conceptualization would make better scores on the Witkin tests than subjects who exhibited the "primitive" thinking. Using just the Occupations check list, we compared these two kinds of person. Tables 13 and 14 show what we found.

The North Bend group furnished strong support for our hypothesis. Subjects whose Choice Pattern records gave no evidence of this

Table 13

EFT Means and Standard Deviations for Subgroups Differentiated According to Presence or Absence of Evidence for Primitve Concepts

	Evidence Absent			Evidence Present					
	N	Mean	SD	N	Mean	SD	t	P	
North Bend	16	38.6	27.2	32	77.1	53.3	3.34	$<.001$	
Enkhuizen	13	41.1	18.4	35	50.3	38.4	.82	$>.10$	ns
Eugene	14	55.8	42.3	10	96.9	56.4	2.05	$<.10$	
Portland	5	44.0	14.3	19	76.4	61.0	1.19	$>.10$	ns

Table 14

Figure Drawing Means and Standard Deviations for Subgroups Differentiated According to Presence or Absence of Evidence for Primitve Concepts

	Evidence Absent			Evidence Present					
	N	Mean	SD	N	Mean	SD	t	P	
North Bend	16	3.1	.7	32	2.5	.9	2.54	$<.01$	
Enkhuizen	13	3.3	.9	35	2.9	1.1	1.42	$>.10$	ns
Eugene	14	2.9	.6	10	2.6	.7	1.11	$>.10$	ns
Portland	5	2.7	.3	19	2.7	.6	0	$>.10$	ns

"primitive" thinking scored significantly lower than the others on the Embedded Figures Test where low scores indicate superiority, and significantly higher on the Figure Drawing test where high scores indicate superiority. The direction of the differences was the same in all except one of the other comparisons, but for the other groups the differences were not significant.

This relationship, however, even in North Bend where it showed up most clearly, is of a special sort. In an attempt to explore it in more detail, we rated each subject's choice pattern protocol for the *amount* of "primitive" thinking it showed. When we correlated these ratings (on a five-point scale) with EFT scores, the resulting correlation was only .18. Table 15 shows why it turned out to be so low. It is apparent that a fairly large proportion of the persons whose scores have been tabulated in the "Evidence Absent" column did very well on the EFT test. But so did many of the persons from the "Evidence Present" group. However, all but two of the persons whose scores were higher than 65 seconds are in the "Evidence Present" column, which extends all the way to 174 seconds. What these findings suggest is that a certain level of general psychological differentiation, as measured by the Witkin tests, may be a *necessary but not sufficient* basis for thinking in an abstract, differentiated way about occupations. We will consider possible explanations for this finding in Chapter 8.

C. Choice Strategies

Under this heading we included a variety of things we had encountered in subjects' protocols. As suggested by the heading, these are approaches to problems of choice which one can use in many situations.

Table 15

Distributions of EFT Scores for Subgroups Differentiated According to Presence or Absence of Evidence for Primitive Concepts. North Bend Group.

EFT Scores (Average time per item)	Evidence Absent	Evidence Present
5-9 seconds		1
10-14 seconds	2	1
15-19 seconds	2	4
20-24 seconds	2	1
25-29 seconds	2	
30-34 seconds	3	4
35-39 seconds		1
40-44 seconds		
45-49 seconds		2
50-54 seconds	2	1
55-59 seconds		1
60-64 seconds	1	1
65-69 seconds		
70-74 seconds		
75-79 seconds		
80-84 seconds		1
85-89 seconds	1	1
90-94 seconds		1
95-99 seconds		
100-104 seconds		
105-109 seconds		
110-114 seconds	1	1
115-119 seconds		1
120-124 seconds		
125-129 seconds		2
130-134 seconds		2
135-139 seconds		
140-144 seconds		
145-149 seconds		2
150-154 seconds		1
155-159 seconds		1
160-164 seconds		1
165-169 seconds		
170-174 seconds		1

They are:

Influence of adults
Influence of peers
Labeling purely on the basis of feeling without elaboration of reasons
Reference to sex roles
Reference to age roles
Reference to level of education required
Stereotyped image of some kind of person

Self-awareness, as shown by:

Evaluation of own abilities, talents, or deficiencies
Evaluation of own personality traits
Reference to past experience

A few of these are used so rarely in any group that the numbers are too small for significance tests. For the others, we compared the frequencies with which they had been checked in our different samples and sex groups.

In three instances there were significant differences between a Dutch group and the comparable American group. They were as follows:

Reference to sex roles. Significant for girls only. $X^2 = 6.30$, $P < .05$. (19 of the Dutch girls and 10 of the American girls referred explicitly to sex appropriateness as a basis for choices.)

Reference to level of education required. $X^2 = 9.39$, $P < .01$. (31 of the Dutch subjects, 15 of the American subjects, referred explicitly to the level of education required for certain occupations.)

Self-awareness. $X^2 = 4.38$, $P < .05$. (16 of the Dutch subjects, 31 of the American subjects gave some evidence of self-awareness, as rated here.)

All of these differences were based on the Occupations check list.

There were no significant differences between the American samples on any of these characteristics.

D. Values

In preparing the check list for Occupations, we used Super's classification of work values as a basis for our list. The check list we developed for the Free Time Activities was made up of values items for which we found evidence in subjects' protocols.

Our procedure in using this part of the check list was to consider first whether the subject's responses enabled us to infer that a value of one of these kinds was present. If we could make such an inference, we did not check this particular grouping or remark as evidence for an interest also. For example, the combination Dentist, Doctor, and Scientist, explained as "They all pay well" would be checked in the Values section opposite "Economic Returns," not as an interest in science. In a sense, our procedure gave the priority to values in doubtful cases.

Nevertheless, there were many individual subjects whose records gave no evidence at all of the influence of values. Comparing the groups with which we were concerned, we found only two differences between Dutch and American subjects in work values and these were significant at only the .10 level. The American boys referred more frequently than Dutch boys to Intellectual Stimulation as a basis for their choices (t = 1.6). Americans (both sexes) also referred more frequently than Dutch subjects did to Recognition and Admiration (t = 1.4).[2]

---

[2] In all of these comparisons, the nomographs prepared by Appel (1952) were used to obtain t-values and probabilities.

Comparing values of the two groups as expressed in Free Time Activities, we found that the Dutch more frequently than the Americans referred to Excitement and Adventure ($t = 1.6$, $P = .10$) and Avoidance of Violence and Killing ($t = 1.3$, $P = .10$), whereas the Americans more frequently referred to Sociability ($t = 2.1$, $P = .05$). The Americans seemed to place a greater value on Activity and Participation ($t = 1.96$, $P = .05$), the Dutch on Passivity and Spectatorship ($t = 2.00$, $P = .05$).

E. Interests

The entries on the Occupations check list suggested that Americans tend to like office work more than the Dutch do ($t = 3.7$, $P = .001$), and the Dutch like sales or store work more than the Americans do ($t = 1.9$, $P = .05$). The American boys show more interest in science and medicine than the Dutch boys do (t's 2.6 and 3.4, $P = .01$); Dutch girls show more interest in travel than American girls do.

The only entries on the interest section of the Free Time Activities check list revealing any nationality differences indicated that the Dutch subjects more frequently expressed an interest in performing and listening to music and in watching plays.

The numbers were too small to permit significance tests to be made for differences among the three American groups on check list items.

Tables H-4 to H-11 in Appendix H list the frequencies for all check list entries in the Values and Interest sections for boys and girls in the four samples.

3. Item Analyses

The third and most detailed analysis that we made of the responses to the Choice Pattern test was an item analysis to determine how frequently each occupation and activity was chosen by subjects in each of the subgroups with which we are concerned. These tabulations are included as Tables H-12 and H-13 in Appendix H. They are intended to be used mainly for reference purposes as we attempt in Chapter 8 to organize and account for our research findings.

CHAPTER 7

ANALYSIS OF DATA AND FINDINGS FROM FOURTH PROJECT--VALUES PROJECT

As explained in Chapter 3, the data on values were obtained from Q-sorts the individual subjects made of 40 items having to do with Personal Directions--what the individual seeks or strives for--and 50 items having to do with Personal Assumptions--what the person believes about the nature of the world and of man. (For items and procedure, see Appendix D.) By his placement of each of the items in one of seven columns, a subject really rates each of them on a seven-point scale. Data of this sort can serve as raw material in two kinds of correlational procedure. One can correlate _items_ with one another, or one can correlate _persons_ with one another. We constructed and factor analyzed correlation matrices of both types. The factor analysis of inter-item correlations leads to inferences about _dimensions_ of the valuing process. The factor analysis of inter-person correlations leads to inferences about _types_ of valuers.

It turned out to be impossible to process the data from all of our samples in both these ways. The computer program for the type of factor analysis we used--a principal components analysis with varimax rotation--requires that the within-group N be larger than the number of variables. Thus it was not possible to obtain item factors for the 50-item Personal Assumptions test based on any _one_ of our samples alone, as an N of either 24 or 48 is less than 50, the number of variables.

The factor analyses that were carried out and will be considered in this chapter were as follows:

Item factors--Personal Directions--for 96 American subjects (North Bend, Eugene, and Portland).

Item factors--Personal Assumptions--for 96 American subjects.

Person factors--48 North Bend subjects--Directions and Assumptions items.

Person factors--39 Dutch subjects--Directions and Assumptions items.

Factor analyses of the inter-person correlations for the Eugene and Portland samples have also been carried out, but no interpretation of the meaning of these factors has as yet been made.

1. Analysis of Inter-Item Correlations. Dimensions of Valuing.

A. Personal Directions

Sixteen factors, nine of them interpretable, were obtained from the correlation matrix based on the responses of the 96 American subjects to the 40 items in this set. The complete rotated factor matrix is shown in Appendix I, Table I-1. In order to facilitate interpretation, the items with positive or negative loadings greater than .30 were brought together. These items defining each factor are presented below followed by the name or label tentatively selected to characterize the factor.

Factor 1	Item	Loading	
Positive	37	.74	I am interested in things that are strange and unknown.
	7	.65	I want to do work which will advance knowledge.
	5	.58	I would like to be a scientist.
	22	.33	The good feeling I get from helping people more than makes up for the trouble.

Factor 1 (cont'd)	Item	Loading	
Negative	30	-.37	I judge a job by how much money it brings in.
	18	-.36	Being with people and having parties is a good way to spend my free time.
	21	-.36	Family life is important to me.
	38	-.31	The ideal life for me is a balanced one--not too much of one thing or another--a "happy medium."

We might call Factor 1 Accomplishment vs. Pleasure.

Factor 2	Item	Loading	
Positive	12	.41	I could have a pleasant life just living in one place and not traveling much.
	38	.39	The ideal life for me is a balanced one--not too much of one thing or another--a "happy medium."
Negative	33	-.74	I want a job that nearly everybody looks up to and admires.
	29	-.72	Some day I would like to become very well known in my field of work.
	27	-.69	I would like to be well known and famous.

A possible name for Factor 2 might be Happy Mediocrity vs. Striving for Fame.

Factor 3	Item	Loading	
Positive	12	.49	I could have a pleasant life just living in one place and not traveling much.
Negative	11	-.86	I want to get around a lot to see many places and do many different things.
	9	-.32	Sports are important to me.
	36	-.30	I like to be free to express myself; it makes me feel good.

This factor is more difficult to characterize in a single brief phrase. The highest negative loading has to do with travel and new experience, but the relationship of the two other negative loadings to this one is not completely clear. We will perhaps be somewhere near its meaning if we call Factor 3 Settling Down vs. Seeking New Experiences.

Factor 4	Item	Loading	
Positive	31	.84	Free time to do what I want is more important than the kind of work I would do to earn my living.
	3	.61	I believe I could learn a lot and become wise just by being alone and thinking a lot.
Negative	12	-.32	I could have a pleasant life just living in one place and not traveling much.

Factor 4 has too few loadings to characterize it very accurately. It seems to reflect Inner Growth vs. Contentment with What One Now Is.

Factor 5	Item	Loading	
Positive	19	.78	I believe one of life's greatest pleasures is having many good friends and few real enemies.
	40	.47	I would rather be known as a good person than a wise person.
	22	.35	The good feeling I get from helping people more than makes up for the trouble.
Negative	20	-.63	My first duty is to myself rather than to others.
	18	-.30	Being with people and having parties is a good way to spend my free time.

What Factor 5 seems to represent is Helping Others vs. Selfishness.

Factor 6	Item	Loading	
Positive	2	.74	I feel you can only live once so enjoy it while you can.
	18	.30	Being with people and having parties is a good way to spend my free time.

Factor 6 (cont'd)	Item	Loading	
Negative	39	-.76	I try to have religious ideas enter into every choice I make in life.

On the basis of only three loadings, the interpretation of Factor 6 must remain very tentative, but Worldliness vs. Religion seems to fit.

Factor 7	Item	Loading	
Positive	1	.66	I like beautiful things, even if they are not useful.
Negative	6	-.71	It is important to me to get all the schooling and learning that I can.
	15	-.52	I would like a job that would give me a chance to show what I can do and how well I can do it.

Here again, three loadings are not an adequate basis for interpretation, but Factor 7 seems to be Esthetic Orientation vs. Success Orientation.

Factor 8	Item	Loading	
Positive	17	.81	I try to keep myself from saying cruel things to another person, even if he makes me very angry.
	23	.54	No matter what I do in life I want to do good things for other people.
	21	.30	Family life is important to me.
Negative	10	-.69	Doing things is more important than just thinking. Action is better than thought.
	28	-.54	In deciding on a job, I would look at the chances for getting ahead.
	18	-.31	Being with people and having parties is a good way to spend my free time.
	30	-.31	I judge a job by how much money it brings in.

Factor 8 can be labeled Warm Personal Relationships vs. Active

Self-seeking or Ambition.

Factor 9	Item	Loading	
Positive	32	.46	I would rather have low pay while working at something I enjoy than have a high salary and do something I dislike.
	1	.30	I like beautiful things, even if they are not useful.
Negative	16	-.88	I believe that a person who works very hard to get ahead is likely to be unhappy.
	25	-.57	I do not expect young people to have ideas about important political and social problems.

While the meaning of the combination of loadings defining Factor 9 is a little doubtful, the phrase Enjoyment vs. Serious Effort appears to cover it fairly well.

Factor 10	Item	Loading	
Positive	38	.35	The ideal life for me is a balanced one--not too much of one thing or another--a "happy medium."
Negative	4	-.78	I want to enjoy the pleasure of just living--of eating good food, resting, and talking with friends.
	40	-.39	I would rather be known as a good person than a wise person.

Factor 11	Item	Loading	
Positive	9	.74	Sports are important to me.
Negative	36	-.71	I like to be free to express myself; it makes me feel good.

Factor 12	Item	Loading	
Positive	35	.82	Variety and change are very important to me.
	32	.33	I would rather have low pay while working at something I enjoy than have a high salary and do something I dislike.

Factor 12 (cont'd)	Item	Loading	
Negative	23	-.45	No matter what I do in life I want to do good things for other people.

Factor 13	Item	Loading	
Positive	8	.74	I enjoy activities and adventure.
Negative	34	-.77	I believe that the success of a country can best be measured by the things it has made, like the number of cars or machines it manufactures.

Factor 14	Item	Loading	
Positive	13	.81	I like difficult work.
	22	.48	The good feeling I get from helping people more than makes up for the trouble.
	5	.30	I would like to be a scientist.
Negative	15	-.30	I would like a job that would give me a chance to show what I can do and how well I can do it.

Factors 10, 11, 12, 13, and 14 were left uninterpreted. In each case the loadings are scarce and do not fit together into any coherent pattern.

Factor 15	Item	Loading	
Positive	14	.76	I never want to do anything unless I can do it well.
	30	.39	I judge a job by how much money it brings in.
	15	.35	I would like a job that would give me a chance to show what I can do and how well I can do it.
Negative	26	-.62	I enjoy taking charge of a group of people and getting them working.
	21	-.33	Family life is important to me.

Factor 15 (cont'd)	Item	Loading	
	32	-.30	I would rather have low pay while working at something I enjoy than have a high salary and do something I dislike.

Factor 15 can be tentatively described as *Individual Success vs. Sociability and Enjoyment.*

Factor 16	*Item*	*Loading*	
Positive	24	.81	I want to be with people who are friendly and kind even if they are not very intelligent.
	38	.30	The ideal life for me is a balanced one--not too much of one thing or another--a "happy medium."
Negative	21	-.40	Family life is important to me.

Factor 16, with its three somewhat incompatible loadings, was left uninterpreted.

In considering these factors, one question we asked ourselves was whether the initial dimensions which had guided the selection of items for the Q-sort corresponded at all to the factors obtained. These original categories, based mainly on theoretical considerations, were orientations toward *experiencing*, *knowing*, *acting*, *achieving*, *socializing*, *caring for others*, *gaining prestige and power*, *gaining money and materialistic success*, *working with things*, *creativity*, *security*, *balance*, and *diversity*.

It seems obvious that there is some resemblance between the theoretical categories and the factors. The only thing not represented by either the positive or the negative pole of one of our factors is *working with things*, and this perhaps should be considered an interest rather than a value. The entities suggested by the factors are, however, somewhat more general than these original formulations--such values as pleasures, success, and the like--and the nature of the opposed value directions suggested by the positive and negative loadings for each factor adds something to the total picture. Some of these contrasts or oppositions may, of course, arise from the Q-sort procedure, which requires that some items be placed in low columns whether one really repudiates them or not.

B. Personal Assumptions

The factor analysis of the inter-item correlation matrix for the 96 American subjects on the Personal Assumptions Q-sort produced 21 factors, 12 of them interpretable. The complete rotated factor matrix is shown in Appendix I, Table I-2

Factor 1	Item	Loading	
Positive	44	.80	One should believe what is taught by schools and good books; they should be accepted as right.
	50	.36	All things point to a God whose law governs the universe.
Negative	46	-.53	In making decisions in the real world, I believe few things are all good or all bad.
	20	-.36	One should feel sorry for a criminal even though his crime is a terrible one.
	2	-.33	Man should put nature to work for him as, for example, in building dams and roads.

Factor 1 might be called Acceptance of Traditional Authority vs. Humanism.

Factor 2	Item	Loading	
Positive	13	.67	Some people never feel any desire to do wrong things.
	5	.44	If the government gave people the things they need for life, such as food and houses, most people would not work.

Factor 2 (cont'd)	Item	Loading	
Negative	39	-.71	I believe in making a plan for my life and following it no matter what happens.
	50	-.52	All things point to a God whose law governs the universe.

The meaning of Factor 2 is not really clear. Perhaps Passivity vs. Planfulness would be close to it.

Factor 3	Item	Loading	
Positive	15	.32	Human nature is neither good nor bad.
	20	.32	One should feel sorry for a criminal even though his crime is a terrible one.
	29	.31	Man is an active chooser, not a passive receiver, in the game of life.
Negative	11	-.86	People are nice to others because they want to have friends when they need them.

Factor 3 seems to involve Respect for Human Nature vs. Belief That People Are Basically Selfish.

Factor 4	Item	Loading	
Positive	7	.64	Most people can be trusted.
	12	.30	If you do something good for someone else, sometime some other person will help you.
Negative	4	-.77	We have more crime today than we used to because we let criminals off too easily.
	5	-.49	If the government gave people the things they need for life, such as food and houses, most people would not work.

Factor 4 expresses Confidence in People vs. Belief That People Must Be Controlled.

Factor 5	Item	Loading	
Positive	38	.58	A person should expect himself to be capable of doing almost everything.

Factor 5 (cont'd)	Item	Loading	
	17	.49	The best way to keep from doing something wrong is to stay away from temptation.
	10	.35	People are nice to others because it makes them feel good to give happiness to others.
	47	.30	The only way to judge if something is true is to find out if most people believe it.
Negative	26	-.73	What happens to me is my own doing; what I do is up to me.
	37	-.55	Every person should try to be different from other people--to find his own special way of life.

Factor 5 is clearly Other-directedness vs. Individualism.

Factor 6	Item	Loading	
Positive	None		
Negative	14	-.76	Some people are born better than others.
	32	-.69	A person's place in life is about the same as his father's and mother's. If a boy's father is a factory worker he should expect to be a factory worker too.

Two loadings are insufficient to characterize a factor definitely, but what Factor 6 seems to involve is Repudiation of Class Distinctions.

Factor 7	Item	Loading	
Positive	12	.47	If you do something good for someone else, sometime some other person will help you.
	48	.41	It is best to keep out of situations which call for the expression of an opinion that may be unpopular.
Negative	36	-.82	Young people should try to make their own choices and plans about their lives rather than be guided by their parents' ideas.
	34	-.53	I should make up my mind by myself because no one else knows my own needs and abilities as well as I do.

Factor 7 is apparently *Dependence on Others vs. Independence.*

Factor 8	Item	Loading	
Positive	43	.84	The trouble with most children is that their parents are too easy with them.
	42	.48	Life is like a game. If you play by the rules, you are likely to win the prize.
Negative	47	-.33	The only way to judge if something is true is to find out if most people believe it.

Factor 8 may express *Living by Established Rules vs. Finding Things Out for Oneself.*

Factor 9	Item	Loading	
Positive	24	.88	In the long run people do get what they deserve in this world.
	23	.37	The way to get the most out of life is to work hard when you are young.
Negative	None		

Factor 10	Item	Loading	
Positive	41	.86	Plans made by a group are likely to be better than plans made by one person alone. "Two heads are better than one."
	49	.41	In order to live a good life a person must develop self-control.
Negative	None		

Factors 9 and 10 had too few high loadings to be interpretable.

Factor 11	Item	Loading	
Positive	31	.80	A person should make choices on the spur of the moment without thinking or pondering over them.
	19	.58	Sometimes it is all right to tell a lie.
	21	.31	Anybody might become a criminal if he grew up under very poor conditions.

Factor 11 (cont'd)	Item	Loading	
Negative	23	-.35	The way to get the most out of life is to work hard when you are young.

Factor 11 opposes Impulsive Action to Serious Effort.

Factor 12	Item	Loading	
Positive	1	.83	Man and nature are one; one does not control the other.
	13	.37	Some people never feel any desire to do wrong things.
Negative	45	-.37	Right and wrong are as different as black and white.
	37	-.33	Every person should try to be different from other people--to find his own special way of life.

Factor 13	Item	Loading	
Positive	6	.60	People all over the world are pretty much alike in what they think is right and wrong.
	8	.55	Old age is better than youth.
Negative	28	-.76	What happens in our lives depends mostly upon things outside ourselves, not on us.

Factors 12 and 13 led to no clear interpretation.

Factor 14	Item	Loading	
Positive	35	.75	One should never do anything that goes against one's parents' wishes.
	45	.56	Right and wrong are as different as black and white.
	47	.51	The only way to judge if something is true is to find out if most people believe it.
Negative	21	-.42	Anybody might become a criminal if he grew up under very poor conditions.
	2	-.38	Man should put nature to work for him as, for example, in building dams and roads.

Factor 14 (cont'd)	Item	Loading	
	20	-.38	One should feel sorry for a criminal even though his crime is a terrible one.
	8	-.33	Old age is better than youth.
	23	-.33	The way to get the most out of life is to work hard when you are young.

Factor 14, while not completely clear, is interpretable as Authority Relationships with People vs. Accepting Relationships with People.

Factor 15	Item	Loading	
Positive	30	.80	The history of a whole country sometimes depends upon the decisions made by one man.
	15	.34	Human nature is neither good nor bad.
Negative	22	-.44	Nearly everyone could create new and useful things if he had a chance.
	12	-.37	If you do something good for someone else, *sometime some other person will help you.*
	10	-.31	People are nice to others because it makes them feel good to give happiness to others.

Factor 16	Item	Loading	
Positive	17	.30	The best way to keep from doing something wrong is to stay away from temptation.
Negative	40	-.82	It is hard to plan ahead because every day brings something new that must be handled as it happens.
	3	-.62	The history of man is one of progress and improvement which is likely to continue.

Factors 15 and 16 were not interpreted.

Factor 17	Item	Loading	
Positive	18	.86	The worst thing about doing something wrong is that you are likely to get caught.

Factor 17 (cont'd)	Item	Loading	
Negative	46	-.46	In making decisions in the real world, I believe few things are all good or all bad.
	42	-.31	Life is like a game. If you play by the rules, you are likely to win the prize.

Factor 17 might be characterized as Immature Conscience vs. Mature Conscience.

Factor 18	Item	Loading	
Positive	16	.33	To think about doing something wrong is just as bad as doing it.
	50	.33	All things point to a God whose law governs the universe.
Negative	27	-.81	There's not much sense in getting excited about what is wrong in the world since you cannot do much about it anyway.
	2	-.31	Man should put nature to work for him as, for example, in building dams and roads.

Factor 18 is probably Religious Submission vs. Human Action.

Factor 19	Item	Loading	
Positive	47	.33	The only way to judge if something is true is to find out if most people believe it.
	17	.30	The best way to keep from doing something wrong is to stay away from temptation.
Negative	33	-.84	In choosing his life work, a person should get to know his own strong and weak points.
	49	-.48	In order to have a good life a person must develop self-control.
	29	-.33	Man is an active chooser, not a passive receiver, in the game of life.

Factor 19 seems to mean Social Influence vs. Individual Responsibility.

Factor 20	Item	Loading	
Positive	16	.50	To think about doing something wrong is just as bad as doing it.
	12	.32	If you do something good for someone else, sometime some other person will help you.
	10	.30	People are nice to others because it makes them feel good to give happiness to others.
Negative	25	-.81	Many of the unhappy things in people's lives are due to bad luck.
	22	-.32	Nearly everyone could create new and useful things if he had a chance.

Factor 21	Item	Loading	
Positive	42	.37	Life is like a game. If you play by the rules, you are likely to win the prize.
	34	.34	I should make up my mind by myself because no one else knows my own needs and abilities as well as I do.
Negative	9	-.81	Students are as much to blame as teachers for poor schools.
	2	-.33	Man should put nature to work for him as, *for example, in building dams and roads.*

Factors 20 and 21 were not interpreted.

Again it is instructive to compare these factors with the theoretical categories originally used in developing the set of items: self-directedness, other-directedness, authority and tradition directedness, attitudes toward choice and work, attitudes toward rules for behavior, moral injunctions, and hypotheses about nature and society. All of these categories seem to be included as positive or negative aspects of one or more of the factors, but the factors also suggest other categories not represented in this list, such as, for example, impulsive action vs. serious effort.

We conclude from these analyses of both Q-sorts that values can be assessed in adolescent subjects, but that a satisfactory assessment instrument would need to be more comprehensive than existing ones, such as the Allport-Vernon-Lindzey Study of Values or the Morris Ways to Live.

2. Analysis of Inter-Person Correlations. Types of Valuers.

The rotated factor matrices for the inter-person correlations in the equated Dutch and American samples can be found in Appendix I, Tables I-3 and I-4. Let us consider the American group first in our attempt to discover what factors of this sort mean.

It can be noted, in the first place, that many of the same persons have high loadings in two or more factors, so that the types cannot be considered to be clearly defined or mutually exclusive. In the second place, the differentiation by sex, which stood out as a salient feature in the clusters based on the choice pattern responses does not appear here. The only single-sex factors for values are Factors 2 and 14. Furthermore, persons grouped together under one factor are not all of the same socio-economic level, and they differ markedly in intelligence.

In order to find out what it is that individuals making up any one of these type factors have in common, it is necessary to examine the responses they actually made to items in the Q-sorts, using the item factors described in the previous section as an aid in interpreting the resemblances between persons. This is a time-consuming task not yet carried out in enough detail to warrant a complete report. When examined in this way, persons with high loadings in Factor 1, for example, turn out to have in common a tendency to emphasize kindness, helpfulness, and acceptance of other people. Persons with high loadings in Factor 2 stress duty to one's self, individualism, and serious effort. So far only enough of this type of analysis has been made to indicate that factors can be characterized in this manner.

The Dutch groups represented by the factors also cut across lines drawn according to sex, father's occupation, church status, or school. They too will require an analysis of how the items were actually classified if we are to characterize the types, an analysis which has not yet been made.

An examination of the general factor structures in the Dutch and American samples leads to the conclusion that they are in many ways very similar. There is about the same total number of factors--14 in the American sample, 13 in the Dutch. The factor loadings are of approximately the same magnitude. Whether there was a nationality difference in the placement of particular statements could not in this case be determined because of the fact that the statements to which American subjects reacted had undergone some changes in wording after the Dutch translation had been made.

Because the analysis of the value types represented by the factors has not been completed, it is not yet possible to draw any general conclusion about how useful this classification is likely to be in subsequent research. A thorough study by the methods Stephenson (1953) has developed will be needed. Perhaps other methods of cluster analysis to sort individuals into types should also be tried. For the present, we can only say that the preliminary findings are promising enough to warrant further study.

CHAPTER 8

CONCLUSIONS AND IMPLICATIONS

Our general purpose, as stated in Chapter 1, was "to study the different kinds of structure individuals impose upon the world of possibilities with which they are confronted, to distinguish as sharply as we can between these varieties of structure, and to describe the outlook and behavior of individuals in these terms." How much of this purpose have we accomplished? What have we found out so far in the investigation as a whole?

The methods we used in the four projects reported separately in the four previous chapters have produced information about two kinds of differences--group differences and differences between individuals within the same group. We shall bring together findings of the separate studies under these two headings.

1. Group Differences

At the outset, we selected our population samples in such a way as to enable us to use as independent variables nationality, sex, socio-economic level, and church status. As indicated earlier, we decided not to use the church variable, partly because preliminary analyses failed to produce any significant relationships between this and other variables, but mainly because the church vs. non-church distinction proved so difficult to make for our American subjects. Thus we are left with nationality, sex, and socio-economic level as the bases for group comparisons.

The significant differences between Dutch and American adolescents were:

a) When asked to list occupations and free time activities with which they are familiar, the Dutch list more occupations and fewer free time activities than the Americans do.

b) When asked to check items from the lists they have produced--items that they see as possibilities for themselves--no difference appears in the number of occupations they check, but the Americans check more free time activities than the Dutch do. The American group checks a greater variety of both occupations and free time activities than the Dutch group does, and many more American boys include professional occupations among those they see as possibilities.

c) When asked to list the names of persons they know, and classify them as child or adult, the Dutch list a larger proportion of adults than the Americans do.

d) When asked to record what they do during a four-day period, the Dutch subjects report more time spent in eating, indoor games, reading, and dancing and parties. The American subjects spend more time on personal care, school activities, telephone conversations, and watching television.

e) When asked to sort sets of 50 occupational titles and 50 free time activities, the Dutch select fewer occupations and fewer free time activities as personal possibilities than the Americans do. The Dutch are more likely than the Americans to refer to sex roles and differences in the amount of education various occupations require. The Americans give more responses indicative of self-awareness, such as evaluations of their own abilities, or references to their own experience. The Americans value intellectual stimulation, recognition and admiration, participation in activities, and sociability somewhat more than the Dutch. The Dutch value excitement and adventure, avoidance of violence, and passive spectatorship a little more than the Americans. Americans show more interest in office work than the Dutch, and American boys show more interest in science and medicine than Dutch boys. The Dutch are more interested in sales work than the Americans, and Dutch girls are more interested in travel than American girls. The Dutch also indicate somewhat more interest in music and theatre than the Americans.

f) Sex differences in all of these areas are wider in the American than in the Dutch group. American girls are more similar to one another and more different from boys than Dutch girls are.

Is there any way in which we can account for all of these differences and at the same time produce some plausible hypotheses about factors influencing the choices young persons make? Some of the reported differences can perhaps serve as explanations of other differences. For example, the fact that sex distinctions are accentuated among the American subjects may be a consequence of the fact that they spend more time than Dutch subjects watching television, with its endless procession of commercials emphasizing the importance of the superficial aspects of femininity and masculinity. The fact that the Dutch boys and girls seem to be somewhat more adult-oriented than the American boys and girls may be linked to the fact that they spend more time in activities involving both adults and children--though which is cause and which effect in this instance would be difficult to determine.

A more inclusive explanation which would account for many if not all of the findings is that the Dutch society provides more external structure than the American society does, structure into which a young person's thinking about choices and plans must be fitted. Perhaps the most important difference is in the organization of schools beyond the elementary level. Someone, the child himself, his parents, or his teachers, must do some thinking about possible future occupations for an individual when he is about 12 years old and has finished his elementary schooling. Whether he participates in the choice of a higher school or whether he simply listens to the discussions others carry on about it, a young person can hardly avoid becoming somewhat familiar with common occupations and how one prepares for them. He learns explicitly which are more suitable for girls and which require a university education.

For the American junior high school student, the situation itself does not usually serve to increase his knowledge or stimulate his thinking about differences in careers and the preparation leading to them. His choices are for the most part minor ones, such as French vs. orchestra, and even when he reaches the place where college preparatory curricula diverge from other courses of study, the choice he makes need not be final.

What our findings suggest is that in this freer, less structured situation, American adolescents, instead of becoming more individualistic, more unique, than their Dutch counterparts, tend to become more peer-oriented, more "other-directed," perhaps one could say more stereotyped. Instead of attempting to fit themselves into the larger society, they become very sensitive to what adolescents themselves consider to be the "right" course of action, the "right" way to think. This would tend to produce the marked sex-typing, the self-scrutiny, and the orientation toward leisure or play activities that we found in our American groups.

In many respects, this orientation may serve an adaptive purpose in the kind of social order we see developing in the United States. Because of the rapidity with which our occupational structure is changing, it would be undesirable for most individuals to start preparing for a particular career too early. Because of the increasing time available for leisure activities as working hours are shortened, it is probably a good thing that adolescents are aware of a great many possible free time pursuits and eager to try them. Furthermore, to the extent that an individual is encouraged to evaluate his own characteristics, rather than to have them evaluated for him, he is being prepared for a life in which he must make flexible use of various means to attain the ends he seeks.

But as one considers these cultural differences, the impression grows that some kinds of person are at a disadvantage in American society as compared with similar persons in Dutch society. Take, for example, the boy with limited academic ability and no particular special talents. Under the Dutch system of differentiated schools, some place must be found for such a boy when he leaves the primary school--some place where he can learn skills useful to himself and to society. A lower technical school, such as the one from which several of our subjects were drawn, seems to meet this need better than our undifferentiated junior high schools do.

It also seems likely that girls in the United States, because of the over-riding importance to them of demonstrating their femininity, are somewhat less free than are girls in the Netherlands to develop their own individuality. The many specific sex differences we picked up in our study call for little special comment because they are so much in line with prevailing opinions about how boys and girls differ. But the fact that in each of the three American samples, similarity indices based on choices and rejections were so high as to place all except one of the girls in one big cluster may well lead to the question of whether girls' attitudes are too stereotyped, too standardized. Many persons and agencies have recently become concerned about the failure of American women to make full use of their potentialities. Inadequate life planning resting on too restricted a concept of femininity may be an important source of these difficulties. The fact that Dutch girls do not differ so much from boys suggests that something about our social norms rather than something inherent in human nature is involved here.

The third basis for classification was socio-economic level, judged from father's occupation. Probably the most practically significant thing about the comparisons we made is the scarcity of statistically significant differences attributable to this source. In the two equated groups, Enkhuizen and North Bend, there were almost none. Comparisons of the three American samples from different communities produced many significant differences in the free listing and checking of possibilities, and a few such differences in daily activities. But the rank orders of the three samples varied from one comparison to another and did not correspond to their rank order for economic status. Comparisons based on the Choice Pattern procedure did not turn up any real differences between American subjects in the three locations. We concluded that socio-economic differences, by themselves, are not major factors influencing the way young people view possibilities and make choices, at least in democratic societies within Western culture.

2. Individual Differences

We were not successful in our first attempt to delineate the main lines of individual differences in the structuring of possibilities by classifying subjects into types on the basis of the McQuitty linkage analysis procedure applied to matrices of similarity indices. While this analysis gave us information about the general structure of each of our groups, many of the types it produced were too large and inclusive to enable us to make the kinds of detailed comparisons we had in mind. Whether the similar factor analysis of inter-person correlations from the Values Q-sort will be more productive we cannot as yet say, as the study of these factors is still in progress.

We found, however, that it was possible to make at least gross distinctions between different ways of dealing with possibilities by scrutinizing the protocols from the second stage of the Choice Pattern Test, in which the subject groups together items he considers to be related and then explains the reasons for his groupings. On the basis of our theoretical analysis of the kinds of thinking involved in choices, and our previous experience with the Choice Pattern procedure, we were able to develop a check list and instructions for using it, on which the entries would indicate the kinds of thinking revealed by a subject's performance. Its main categories were Choice Strategies, Values, and Interests. This gives us a basis for identifying the subjects whose choices are mainly determined in any one of these ways, and other subjects who make use of a combination of methods. It leaves the way open for further study of the stability of these characteristics and of differences in their effectiveness.

One of our principal findings in the study involving this check list was something we had not anticipated. A considerable number of our subjects, about three-fourths in all, give some evidence in their groupings that they are using concepts often labeled "concrete," "immature," or "primitive."

What such subjects do is to put items together on the basis of association rather than similarity. For example, the combination "Pilot" and "Stewardess" is explained as "Both work on an airplane," and the combination "Taxi driver," "Doctor," and "Barber" is accounted for by the statement, "The taxi driver takes the doctor to the building where his office is, and the barber cuts his hair."

Such "non-analytic" varieties of conceptualization have been encountered fairly frequently in younger children, but we had not expected to find them in 14-year-olds, who presumably have arrived at Piaget's "formal operations" stage of development. Our analysis of the relationship between this tendency and the measures of psychological differentiation we had obtained from the Witkin tests gave us a clue as to the reason. What we found was that persons entirely free from this "primitive" variety of conceptualization were almost all better-than-average on the Witkin tests. But many other persons who ranked just as high in psychological differentiation seldom used abstract concepts (grouping by similarity) in dealing with the occupational titles and used "primitive" concepts a great deal. A plausible explanation seems to be that there is a "lag" here. Growth in ability to deal with abstractions does not automatically bring with it a tendency to deal with all kinds of material in an abstract way. And because attitudes toward many occupations and activities are formed at an early stage of development, they may persist for a long time in immature forms unless a person repeatedly rethinks them. For example, a girl who at the age of 10 has ruled out almost all occupations because she considers them unsuitable for girls (and Tyler's [1955] research indicates that this is what many of them do) may never really think about any of them again, and thus she never applies to them the conceptualization processes she develops as she matures.

Several implications of our finding that "primitive" concepts may enter into the thinking underlying occupational choices are apparent. For one thing, if most of a subject's groupings reflect this kind of thinking, we can probably not assess his values and interests from a Choice Pattern record, since judgments about values and interests presuppose abstract concepts, or in Choice Pattern terms, grouping by similarity. It follows also that for such a person, scores on any inventory of interests or values are probably meaningless. The fact that he chooses the "mechanical" alternative 10 times while he is responding to the items in the Kuder test, for example, does not indicate any certain amount of mechanical interest if each choice is individually linked in his mind to other than the mechanical aspects of the activity in question.

We have put the word "primitive" in quotation marks because it is not at all certain that the thinking we are characterizing by the term is always less mature or less adaptive than more abstract thinking. For a boy who leaves school at 14 to go to work, the concept "work in the cannery," or "Mr. Johnson's office boy" is probably more useful than a concept like "assembly line work" or "clerical work." But it seems possible that persons with such concepts may be at a disadvantage when confronted with a demand that they change occupation or move to a different region. It may be that the persons who in our time are most frequently being called upon to make such shifts because of automation and changing occupational trends are the least likely to have developed the abstract ways of thinking about occupations that would facilitate such changes. There are interesting research questions here.

Many research problems in the area of possibilities and choices can now be subsumed under two principal questions. First, what are the develop-mental trends with regard to these individual differences? Do more mature ways of thinking emerge and less mature ones drop out as time passes, or do changes depend upon certain kinds of experience? Second, are various alternative ways of organizing possibilities and making choices equally successful in life situations, or are some of them preferable to others? Do intrinsic values, for example, make for more success and satisfaction than extrinsic values?

Other questions presented themselves to us as we attempted to bring together our findings from the Choice Pattern study and the Values study. All of our subjects were able to react in some manner to the statements of verbalized values they encountered in the Q-sort. But only a fraction of them spontaneously used statements expressing values in accounting for their groupings on the Choice Pattern test. How do the persons who use a given value as a basis for choices (or at least say they do) differ from others giving verbal assent to the same value but not applying it in choice situations?

3. Evaluation of Progress Toward Original Objectives

It is clear from the foregoing discussion that our first objective, "to obtain knowledge about the varieties of cognitive structures young persons use in thinking about possibilities and making choices . . . ." has been to some degree attained.

The second objective, "to obtain evidence with regard to the construct validity of several new assessment techniques that may prove useful to counselors," has also been accomplished. Basic value orientations derived from theoretical discussions of human values were recognizable in the factors obtained from the Q-sort procedure. Varieties of choice determiners distinguished from one another on the basis of theoretical thinking about choices, interests, and values turned out to be distinguishable in the Choice Pattern performances of individuals.

Both of these assessment procedures could be made available to counselors in their present form, although more information about their reliability, predictive validity, and norms should be assembled before this is done. It may be, however, that it would be more desirable to use what we have learned here to enable us to develop sharper tools than these. We have begun to see what these might be like--a new inventory of values, for example, or a test of conceptual thinking about occupations.

It is the third objective, "to facilitate the planning of subsequent research studies on the origins and consequences of different kinds of possibility structures," that the investigators feel has been most successfully carried out. Plans for life history studies took shape in our minds as we thought about the data reported here. Numerous new research directions, some of them mentioned in the preceding sections, became apparent. As has often happened, the ideas stimulated by this research undertaking may turn out to be more important than the conclusions to which it led.

REFERENCES

Albert, E. M. & Kluckhohn, C. 1959. Values, ethics, and esthetics. Glencoe, Illinois: Free Press.

Allport, G. W., Vernon, P. E., and Lindzey, G. 1951. Study of values. Boston: Houghton-Mifflin.

Appel, V. 1952. Companion nomographs for testing the significances of the difference between uncorrelated percentages. Psychometrika, 17, 325-330.

Buros, O. K. (Ed.) 1965. The sixth mental measurements yearbook. Highland Park, N. J.: Gryphon Press.

Brim, O. G., Glass, D. C., Lavin, D. E., & Goodman, N. 1962. Personality and decision processes: studies in the social psychology of thinking. Stanford: Stanford University Press.

Dole, A. A. 1961. A study of values as determinants of educational-vocational choices in Hawaii. U. S. Office of Education Cooperative Research Project No. 757.

Dukes, W. F. 1955. Psychological studies of values. Psychol. Bull., 52, 24-50.

Dunnette, M. D., Kirchner, W. K., and de Gidio, J. 1958. Relations among scores in Edwards Personal Preference Schedule, California Psychological Inventory, and Strong Vocational Interest Blank for an individual sample. J. appl. Psychol., 42, 178-181.

Ferguson, L. W., Humphreys, L. G., & Strong, F. W. 1941. A factorial analysis of interests and values. J. educ. Psychol., 32, 197-204.

Gardner, R. W., Holzman, P. S., Klein, G. S., Linton, H. B., & Spence, D. P. 1959. Cognitive control: a study of individual consistencies in cognitive behavior. *Psychol. Issues*, 1, No. 4, Monograph 4.

Gardner, R. W., Jackson, D. N., & Messick, S. J. 1960. Personality organization in cognitive controls and intellectual abilities. *Psychol. Issues*, 2, No. 4, Monograph 8.

Jacob, P. E. & Flink, J. J. 1962. Values and their function in decision-making. *American Behavioral Scientist*, Supplement, 5, No. 9.

Kluckhohn, C. K. M. 1951. Values and value orientations in the theory of action. In T. Parsons and E. A. Shils (Eds.), *Toward a general theory of action*. Cambridge: Harvard University Press, p. 395.

Kluckhohn, F. R. & Strodtbeck, F. L., 1961. *Variations in value orientations*. Evanston: Row, Peterson.

Mann, L. 1956. The relation of Rorschach indices of extratension and introversion to a measure of responsiveness to the immediate environment. *J. consult. Psychol.*, 20, 114-118.

McQuitty, L. L. 1957. Elementary linkage analysis for isolating orthogonal and oblique types and typal relevancies. *Educ. Psychol. Measmt.*, 17, 207-229.

Morris, C. 1956. *Varieties of human value*. Chicago: University of Chicago Press.

Sarbin, T. R. & Berdie, R. F. 1940. Relation of measured interests to the Allport-Vernon Study of Values. *J. appl. Psychol.*, 24, 287-296.

Smith, M. B. 1963. Personal values in the study of lives. In R. W. White (Ed.), *The study of lives*. pp. 325-347.

Stephenson, W. 1953. *The study of behavior*. Chicago: University of Chicago Press.

Stricker, L. J. & Ross, J. 1962. A description and evaluation of the Myers-Briggs Type Indicator. Research Bulletin 62-6. Princeton, N. J.: Educational Testing Service.

Super, D. E. 1940. Avocational interest patterns. Stanford: Stanford University Press

Super, D. E. 1962. The structure of work values in relation to status, achievement, interests, and adjustment. J. appl. Psychol., 46, 231-239.

Super, D. E. & Overstreet, P. L. 1960. The vocational maturity of ninth-grade boys. New York: Teachers College Bureau of Publications, Columbia University.

Tyler, L. E. 1955. The development of "vocational interests": I. The organization of likes and dislikes in ten-year-old children. J. genet. Psychol., 86, 33-44.

Tyler, L. E. 1961. Research explorations in the realm of choice. J. counsel. Psychol., 8, 195-201.

Tyler, L. E. 1964. The antecedents of two varieties of interest pattern. Genet. Psychol. Monogr., 70, 177-227.

Winer, B. J. 1962. Statistical principles in experimental design. New York: McGraw-Hill, pp. 578-605.

Witkin, H. A. 1950. Individual differences in ease of perception of embedded figures. J. Personality, 19, 1-15.

Witkin, H. A., Dyk, R. B., Faterson, H. F., Goodenough, D. R., & Karp, S. A. 1962. Psychological differentiation. New York: Wiley.

Witkin, H. A., Lewis, H. B., Hertzman, M., Machover, K., Meissner, P. B., & Wapner, S. 1954. Personality through perception. New York: Harper.

APPENDIX A

ENGLISH AND DUTCH VERSIONS OF THE QUESTIONNAIRE

QUESTIONNAIRE USED IN THE UNITED STATES

The purpose of this investigation is to find out what young people are thinking about the lives they wish to lead as adults. Through what influences and what kinds of thinking do they get their ideas?

We are asking the same questions of boys and girls in the Netherlands, in the United States, and in a country in Asia, Nepal.[1] Thus we can find out how much alike is the thinking of boys and girls in these three countries.

---

[1] When the study began in 1963 tentative arrangements had been made to obtain comparable data from Nepal. It did not prove feasible to continue this plan, however.

Part I. The questions that follow have to do with yourself and your family.

Name ____
(Last name) (First name)

Address ____
(Street & number) (City)

Age ____________ Birthdate ____________ Boy ____________ Girl ____________

School ______________________________ Grade ____________________

Number of years you have lived in North Bend ____________________

List here all the schools you have attended before this one.

Name of School	City	When and how long you went there

What does your father do? (Write down the kind of work your father does rather than where he works, for example, "Mailman," rather than "For post office."

____

What did your mother do before she was married? ____________________

What does your mother do now? ______________________________

Do you know how far your father went in school? Yes___ No___

If you know, place a cross before the highest grade that he attended.

- ________ First grade
- ________ Second grade
- ________ Third grade
- ________ Fourth grade
- ________ Fifth grade
- ________ Sixth grade
- ________ Seventh grade
- ________ Eighth grade
- ________ Ninth grade
- ________ Tenth grade
- ________ Eleventh grade
- ________ Twelveth grade
- ________ Graduated from High School

Did your father have any further education? Yes________ No________

If he did, what kind of education?

________Business or technical college

________University; if so, did he complete: one or two years________

three or more years______

graduated________

________Other; if so, what type of school?________________

Do you know how far your mother went in school? Yes______ No______

If you do know, place a cross before the highest grade that she attended.

________First grade

________Second grade

________Third grade

________Fourth grade

________Fifth grade

________Sixth grade

________Seventh grade

________Eighth grade

________Ninth grade

________Tenth grade

________Eleventh grade

________Twelveth grade

________Graduated from high school

Did your mother have any further education? Yes________ No________

If she did, what kind of education?

________Business or technical college

________University; if so, did she complete: one or two years________

three or more years______

graduated________

________Other; if so, what type of school?________________

Where was your father born?________________

Where was your mother born?________________

Have you any brothers and sisters?

List them beginning with the oldest and indicate for each the age, whether it is a boy or a girl and what he or she does. Include your own name at the appropriate place.

Name	Age	Boy	Girl	What does he or she do?

Are there any other people who live with you, such as other members of the family or roomers? If so, indicate here who they are. For example: "grandmother," "aunt," "boarder" (you do not need to give the person's name).

____

____

Do your parents go to church? Regularly? Yes________ No________
Once in a while? Yes___ No___

Place a cross before the church that you mean. If you are not sure which church, place a cross here.________

________Baptist

________Congregational

________Disciples of Christ

________Jewish

________Latter Day Saints

________Lutheran

________Methodist

________Presbyterian

________Protestant Episcopal

________Roman Catholic

________Seventh Day Adventists

________(Other)

Part II.

Now we would like to know something about the occupations and careers you are familiar with. Will you list under one another all of the occupations you can think of.

Occupations	Occupations

Now place a cross in front of each occupation that you think you might be suited for or might follow later on.

Now write on this page all the things you can think of that people do for pleasure in their free time. These might include sports, hobbies, clubs, social affairs--in short, anything that young people or grown-ups do in their free time.

____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________
____________________ ____________________

Now place a cross in front of each thing that you yourself might like to do if you had the opportunity.

Now we would like to find out how many people you know. List in the first column the names of people you know personally. Pay no attention to the other columns until you have finished.

Name	Adult	Child	Member of Family	Friend	Acquaintance

Indicate now after each name whether the person is a child or an adult and if he or she is a member of the family, a friend, or an acquaintance (for example, a storekeeper or policeman).

Example

Name	Adult	Child	Member of Family	Friend	Acquaintance
John Johnson	x				

How many people can you name that you do not actually know personally? They can be historical characters or characters from books, movies, television, newspapers or radio. Write all the names of this kind that you can think of.

Name	History	Book	Film	TV	Sport	Government	Other

Now place a cross after each name to show what kind of a person he is, that is, how you heard of him.

Example

Name	History	Book	Film	TV	Sport	Government	Other
Kennedy				X			

It frequently happens in the course of a person's life that he or she has an opportunity to move to another city or even to another country. We would like to find out how many other places you are familiar with, so that you would know whether or not you would like to live there.

List below all of the places or countries you know something about, because you have been there, have read about it, have heard someone tell about it, or in some other way have found out about it. You need not include places you have heard about only in your geography class.

		Source of information		
Place or Country	Been there	Read	Heard	Other

Now place a cross after each place to indicate how you know about it.

Example

		Source of information		
Place or Country	Been there	Read	Heard	Other
Seattle	X			

Now place a cross in front of the name of each place or country that you yourself might like to move to.

Part III.

On this page we would like you to draw a person. It does not matter whether or not you are good at drawing. Just draw as well as you can.

Now on this page draw another person. If on the page before this you drew a boy or man, now draw a girl or woman. If you drew a girl or woman on the page before this, now draw a boy or man.

QUESTIONNAIRE USED IN THE NETHERLANDS

Het doel van dit onderzoek is om uit te vinden wat jonge mensen zich voorstellen van het leven dat ze zouden willen leiden als ze volwassen zijn. Door welke invloeden en gedachten komen ze tot deze voorstelling?

We stellen dezelfde vragen aan jongens en meisjes in Nederland, Amerika en een Aziatisch land, Nepal. Op die manier kunnen we zien in hoeverre jongens en meisjes in deze drie landen hetzelfde denken.

Deel I. De vragen die nu volgen vertellen ons iets over jezelf en je familie.

Naam ____
(achternaam) (voornaam)

Adres ____
(straat + huisnummer) (plaats)

Leeftijd ________ Geboortedatum ________ Jongen ________ Meisje ________

School ______________________________ Klas ________________

Aantal jaren dat je al in Enkhuizen of omgeving woont ________________

Schrijf alle scholen waar je op gezeten hebt, voordat je op deze school kwam, op.

Naam van de school	plaats	wanneer en hoelang je daar geweest bent
________________	________________	________________
________________	________________	________________
________________	________________	________________
________________	________________	________________
________________	________________	________________

Wat doet je vader? (Vertel wat voor soort werk je vader doet, en niet waar hij werkt, dus b.v. "Postbode," niet "Bij de P.T.T.")

____

Wat deed je moeder voordat ze trouwde? ________________________

Wat doet je moeder nu? ________________________________

Weet je ook op welke scholen je vader is geweest? Ja______ Nee______
Zo ja, of welke van de volgende scholen is hij dan geweest?
(Zet een kruisje voor de school die je bedoelt)

______ Lagere School

______ V.G.L.O.

______ U.L.O.

______ Lagere Technische School

______ Hogere Technische School

______ Lagere Landbouwschool

______ H.B.S.

______ Gymnasium

______ Lyceum, afdeling gymnasium

______ Lyceum, afdeling H.B.S.

______ Andere scholen en welke zijn dat dan? ________________

Heeft je vader nog een verdere opleiding gehad? Ja______ Nee______

Zo ja, welke opleiding?

________Universiteit

________Kweekschool

________Een andere opleiding, en welke is dat?____________________

Weet je ook op welke scholen je moeder is geweest? Ja______ Nee______

Zo ja, op welke van de volgende scholen is zij geweest?
(Zet een kruisje voor de school die je bedoelt)

________Lagere School

________V.G.L.O.

________U.L.O.

________Huishoudschool

________H.B.S.

________Gymnasium

________Lyceum, afdeling gymnasium

________Lyceum, afdeling H.B.S.

________Andere scholen, en welke zijn dat dan?____________________

Heeft je moeder nog een verdere opleiding gehad? Ja______ Nee______

Zo ja, welke opleiding?

________Universiteit

________Kweekschool

________Een andere opleiding, en welke is dat?____________________

Waar is je vader geboren?____________________________________

Waar is je moeder geboren?____________________________________

Heb je nog broertjes en zusjes? Schrijf ze eens op, te beginnen bij de oudste en vertel hun leeftijd, of het een jongen of een meisje is, en wat ze doen. Zet jezelf er op de goede plaats tussen.

naam	leeftijd	jongen	meisje	wat hij/zij doet

Wonen er nog meer mensen jij jullie in huis? B.v. familieleden of kostgangers. Zo ja, schrijf dan op wie het zijn, b.v. grootmoeder, tante, kostganger. Je hoeft hun namen niet te noemen.

____

____

Gaan je ouders naar de kerk? Ja__________ Nee__________

Zo ja, naar welke kerk? (Zet een kruisje voor de kerk die je bedoelt.)

__________Rooms Katholiek

__________Gereformeerd

__________Nederlands Hervormd

__________Overige

Deel II. Nu willen we graag iets weten over de ambachten en beroepen die je kent. Wil je hieronder alle ambachten en beroepen onder elkaar schrijven die je kan bedenken?

Beroepen	Beroepen

Zet nu een kruisje voor al die vakken, die je voor jezelf wel geschikt vindt om later te gaan doen.

Schrijf nu op deze bladzij alle dingen op, die je maar kunt bedenken, die mensen voor hun plezier doen in hun vrije tijd. Daarbij horen ook sport, hobbies, clubs, uitgaan, kortom alles wat jonge mensen of volwassenen in hun vrije tijd doen.

______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________
______________________________ ______________________________

Zet nu weer een kruisje voor die dingen die je zelf wel eens zou willen doen als je daarvoor de gelegenheid had.

Nu zouden we graag willen weten hoeveel mensen je wel kent. Schrijf in de eerste kolom alle namen die je maar te binnen willen schieten, op. Kijk niet naar de andere kolommen voordat je hiermee klaar bent.

Naam	Volwassene	Kind	Familielid	Vriend	Bekende

Schrijf nu achter iedere naam of de persoon een kind of een volwassene is en of hij/zij een familielid, vriend of een bekende, zoals b.v. een winkelier of een politieagent, is. Voorbeeld:

Naam	Volwassene	Kind	Familielid	Vriend	Bekende
Jan Jansen	X			X	

Hoeveel mensen ken je van naam, zonder dat je ze zelf echt kent? Het kunnen personen uit de geschiedenis zijn, personen uit boeken, films, televisie, krant, radio, e.d. Schrijf alle namen op die je te binnen schieten.

Naam	geschiedenis	boek	film	t.v.	sport	regering	ander

Zet nu een kruisje achter iedere naam, om aan te geven wat voor soort mens het is, hoe je van deze persoon gehoord hebt.

Voorbeeld:

Naam	geschiedenis	boek	film	t.v.	sport	regering	ander
Kennedy				X			

Het gebeurt vaak dat iemand in de loop van zijn leven de gelegenheid heeft om te verhuizen naar een andere stad, of naar een ander land. We willen nu graag weten van hoeveel andere plaatsen je al iets afweet, zodat je weet of je het prettig zou vinden of niet om daarheen te verhuizen. Schrijf nu hieronder alle plaatsen of landen op, waar je al iets van afweet, omdat je er geweest bent, of erover gelezen hebt, of erover hebt horen vertellen, of omdat je er op een andere manier iets van te weten bent gekomen, dus niet plaatsen en landen die je alleen maar in de aardrijkskundeles geleerd hebt.

	Bron van informatie			
Plaatsen of landen	geweest	gelezen	gehoord	andere manier

Zet nu achter de plaatsen of landen die je genoemd hebt, een kruisje, om aan te geven hoe je iets erover te weten bent gekomen. Voorbeeld:

	Bron van informatie			
Plaatsen of landen	geweest	gelezen	gehoord	andere manier
Brussel	X			

Zet nu een kruisje voor die plaatsen of landen die je zelf prettig lijken, waarheen je zelf wel zou willen verhuizen.

Deel III.

We willen nu graag dat je op deze bladzij iemand tekent - zo maar iemand. Het geeft niet of je goed kan tekenen of niet. Teken maar zo goed als je kunt.

Teken nu op deze bladzij nog iemand. Als je op de vorige bladzij een jongen of een man getekend hebt, teken dan nu een meisje of een vrouw. Als je op de vorige bladzij een meisje of een vrouw getekend hebt, teken dan nu een jongen of een man.

APPENDIX B
INFORMATION ABOUT STANDARDIZED TESTS

Figure Drawing
Progressive Matrices
Embedded Figures
Word Naming

INSTRUCTIONS FOR RATING FIGURE DRAWINGS

Ratings of I:

This group consists of the most primitive drawings; these drawings characteristically manifest most of the following signs of absence of differentiation (reflecting either complete lack of development and extreme immaturity, or disintegration of a depressive nature):

1. Primitive Integration
   - a. body parts stuck on to each other (head, neck, rump, limbs), appendages stuck on to torso or superimposed upon body outline (i.e., transparencies of limbs).
   - b. disintegration of figure or appendages, i.e., discontinuing of body and/or appendages, fading out into confused scribbles or nothingness.
   - c. arms (and/or feet) abruptly ended by claws.
   - d. sex characteristics and other features arbitrarily superimposed, e.g., square representing female torso with two circles for breasts or dot for bellybutton; circles on limbs representing joints, etc.
   - e. scribbled hair, or hat, stuck on to the top of head outline.
2. Primitive Forms, Shape
   - a. circle or oval heads, with no attempt at shaping hairline, etc.
   - b. facial features represented by ovals, circles, dots, with no attempt at expression.
   - c. no, or very poor, attempt to approximate human shape, predominant use of rectangles and circles or ovals, representing all body parts. Unsophisticated use of scribbles, sticks, for limbs.
3. No Attempt at Realistic or Symbolic Representation by Means of Detailing
   - a. empty drawings, bare outlines.
   - b. no representation either of clothing or of nude body, or inconsistency in representation (e.g., buttons, but no other indication of clothing, no neckline, cuffs, etc.).
   - c. gross body outlines, representation of barest essentials, i.e., head, torso, appendages, with all minor and many major omissions (all but 2 subjects omit ears, all but one omit hands, 2 omit neck).

d. barest essentials of facial features, i.e., eyes, nose mouth, often eyebrows, occasionally ears, all represented by primitive forms.

4. Unmodulated, Uncontrolled Line

Ratings of II:

This group consists of slightly less primitive drawings. While still quite undifferentiated in nature and quality, drawings in this group show a markedly higher level of integration of body parts, (all subjects at least attempt to integrate arms, legs, neck, and head, though some succeed very poorly). Some attempt at representation of the human body shape is manifest, with either some indication of clothing or some isolated basic detail of the bare body. Facial features are generally more detailed, a bit less primitive, with some drawings in this group showing definite facial expression. There are no omissions of basic features (all figures have ears, neck, hands - or at least a somewhat rationalized omission of only one of these features). Lines are more consistent and deliberate.

Ratings of III:

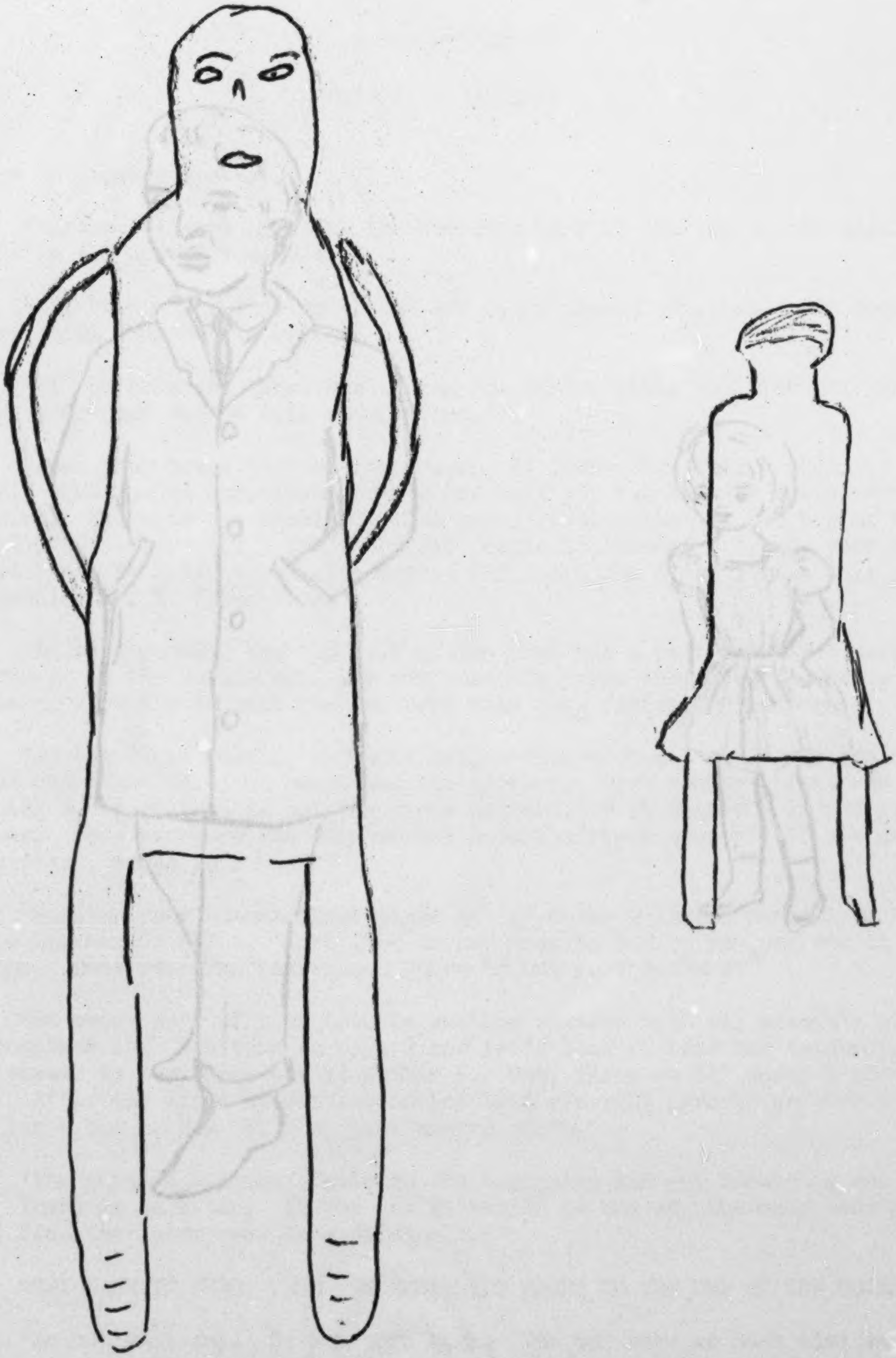
This group consists of drawings which are intermediate in all the areas evaluated in the primitivity-sophistication scale. Characteristically, these drawings are adequate in level of integration, form, detailing, and individual facial expressions. These productions manifest no relatively outstanding sophistication or complexity on the one hand, nor signs of extraordinary lack of differentiation or of disintegration on the other.

Ratings of IV:

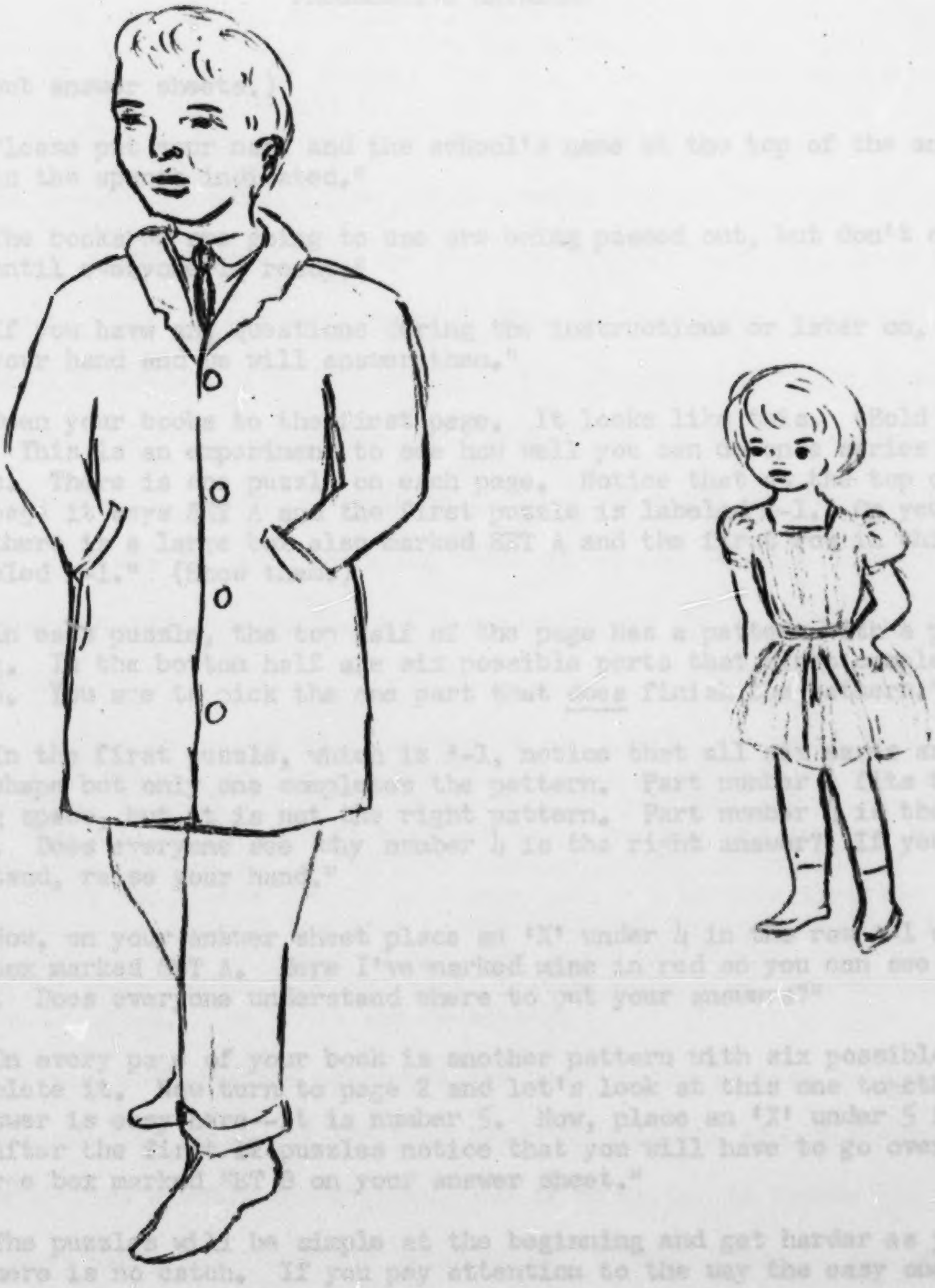
This group contains drawings which, while not superior in all areas of the rating scale, show a relatively high degree of sophistication in one or several aspects. The level of integration is good and the attempt at representation of the human shape and of realistic proportions is marked; there is an emphasis on detailing and facial expression. However, the end product appears less deliberate, the lines less decisive, the drawings less skillful and in particular the head treatment is less sophisticated than that of drawings placed in Group V.

Ratings of V:

This group consists of the most sophisticated drawings. These drawings are characterized by great emphasis on detail of head, face, expression, as well as clothing and/or body features, shape, and sex characteristics, (often excessively narcissistic), combined with not only an attempt at, but very skillful achievement of rational, consistent integration of body parts, clothing, and accessories, decisively and purposefully drawn.



Examples of Figure Drawings Rated 1



Examples of Figure Drawings Rated 5

INSTRUCTIONS

PROGRESSIVE MATRICES

(Pass out answer sheets.)

"Please put your name and the school's name at the top of the answer sheet in the spaces indicated."

"The books we are going to use are being passed out, but don't open yours until everyone is ready."

"If you have any questions during the instructions or later on, just raise your hand and we will answer them."

"Open your books to the first page. It looks like this. (Hold up open book.) This is an experiment to see how well you can do on a series of puzzles. There is one puzzle on each page. Notice that at the top of the first page it says SET A and the first puzzle is labeled A-1. On your answer sheet there is a large box also marked SET A and the first row in this box is labeled A-1." (Show them.)

"In each puzzle, the top half of the page has a pattern with a part missing. In the bottom half are six possible parts that might complete the pattern. You are to pick the one part that does finish the pattern."

"In the first puzzle, which is A-1, notice that all six parts are the right shape but only one completes the pattern. Part number 1 fits the missing space, but it is not the right pattern. Part number 4 is the right answer. Does everyone see why number 4 is the right answer? If you don't understand, raise your hand."

"Now, on your answer sheet place an 'X' under 4 in the row A-1 on the large box marked SET A. Here I've marked mine in red so you can see it better. Does everyone understand where to put your answers?"

"On every page of your book is another pattern with six possible parts to complete it. Now turn to page 2 and let's look at this one together. The answer is easy here--it is number 5. Now, place an 'X' under 5 in row A-2. After the first 12 puzzles notice that you will have to go over to the large box marked SET B on your answer sheet."

"The puzzles will be simple at the beginning and get harder as you go on. There is no catch. If you pay attention to the way the easy ones go you will find the later ones less difficult."

"TRY EACH IN TURN, FROM THE BEGINNING RIGHT TO THE END OF THE BOOK."

"Do not omit any. Do not turn back. You can have as much time as you like."

"Now, go ahead by yourselves until you get to the end of the book."

INSTRUCTIONS FOR EMBEDDED FIGURES TEST

> "I am going to show you a series of colored designs. After you examine each design, I will show you a simpler figure, which is contained in that larger design. You will then be given the larger design again, and your job will be to locate the smaller figure in it. Let us go through one to show you how it is done."

The S was then shown the practice complex figure (P-1) for 15 seconds, after which it was removed and the practice simple figure (P) shown for 10 seconds. When it had been removed, the complex figure was presented once more, with instructions to locate the simple figure in it. The S was timed in this task, and the score recorded for him was the time taken to locate the simple figure. When he reported that he had found the figure, he was required to trace it, so that the E could be sure it was the correct one.

After the practice trial, the S was given the following additional instructions.

> "This is how we will proceed on all trials. I would like to add that in every case the smaller figure will be present in the larger design. It will always be in the upright position. There may be several of the smaller figures in the same large design, but you are to look only for the one in the upright position. Work as quickly as you possibly can, since I will be timing you; but be sure that the figure you find is exactly the same as the original figure both in size and in proportions. As soon as you have found the figure, tell me at once. If you ever forget what the small figure looks like, you may ask to see it again. Are there any questions?

The same presentation procedure was used on the 24 test trials. The S's score on each trial was the time taken to find the simple figure. A maximum of five minutes was allowed, and if he failed to locate the figure within that time, his score was recorded as 5' (F). While he was searching for the simple figure, he was permitted to re-examine the copy of it as often as he wished. This was deemed necessary because the task would cease to be the one intended if the S no longer remembered the structure of the figure for which he was searching. The complex figure was of course removed, so that both figures were never seen simultaneously, and the S was discouraged from taking more than 10 seconds for each re-examination. The stop watch was stopped during the period of re-examination, so that this time was not included in the final score.

When the S reported discovery of the simple figure within the complex one, the time was noted, but the stop watch was permitted to go on while he traced it. If this was done correctly, the score recorded for the trial was the time of discovery; but if the correct figure was not traced, the S continued his search and the time consumed in tracing the incorrect figure was included in the final score. The S's score for the whole test was the average of the times taken to locate the simple figures in all 24 complex figures.

WORD NAMING INSTRUCTIONS

"In these numbered spaces (showing S the form) I want you to write down 25 words, any 25 words, just as they come to your mind. Don't write sentences or groups of words."

(After S has completed this, proceed to question him.)

"What did you have in mind when you wrote that word?" (Determine if S was referring to the immediate environment[1] or not for each word and record this by placing an E after all such words. (Other similar questions might be: "What made you write it?" or "Did you have anything in particular in mind in reference to this word?"

---

[1] The immediate environment is defined as extending the entire experimental period, i.e., from the moment the subject entered the experimental room to that of his completing the task. Examples of references to it are words referring to the room's furnishings, to sounds coming from outside the building, to the S's physical states at the time of the experiment.

APPENDIX C

INFORMATION ABOUT CHOICE PATTERN TEST

INSTRUCTIONS FOR CHOICE PATTERN TEST

(Occupations)

On each of these little cards is the name of an occupation taken from the lists made by you and the other young people in Holland and America. I would like you to sort out the cards in the following way. Over here on the right-hand side place under each other all the names of occupations that you can see as possibilities for a person like you. Over here on the left-hand side place all those that you think of as out of the question for a person like you. If there should be some occupation you don't know or about which you have no opinion at all, just put the card here in this "No opinion" envelope.

. . . .

Now will you look at the cards you have placed on the right side to show that you think of them as possibilities. What I would like you to do now is to break the list down into groups of occupations that seem to go together in your mind--that you would choose for the same reason or in the same way. I don't care how many or how few groups you make or how large or how small the groups are. Just arrange them according to the way they seem to you.

. . . .

Now will you do the same thing for the cards you placed on the left to show that you ruled them out or rejected them. Sort them into groups, placing together those that seem to go together for you--that you would tend to reject for the same reason.

. . . .

Now I'd like you to tell me what each of your groups means. I want to put down, too, the numbers of the cards you included in each group. Will you read me the numbers and then tell me what it is that these occupations have in common for you.

. . . .

(Free Time Activities)

We are going to do the same thing now with free time activities. First place on the right side those you now do and those you think you would like to do later if circumstances permit. Place on the left side the ones that you think of as out of the question for you.

. . . .

Now group the cards, putting into the same group things that go together in your mind--that you would choose or reject for the same reason.

. . . .

Now tell me what each of these groups means--the numbers of the cards and what it is they have in common.

CHOICE PATTERN ITEMS--OCCUPATIONS

1. Contractor
2. Actor
3. Lawyer
4. Pharmacist
5. Architect
6. Baker
7. Athlete (Professional)
8. Bookkeeper
9. Farmer
10. Bus Driver
11. Manager
12. Doctor
13. Minister
14. Electrician
15. Factory Worker
16. Traveling Salesman
17. Watchmaker
18. Engineer
19. Journalist
20. Office Worker
21. Captain (Ship)
22. Barber or Hairdresser
23. Cook
24. Rancher
25. High School Teacher
26. Plumber
27. Sailor
28. Milkman
29. Bricklayer
30. Mechanic
31. Scientist
32. Grade School Teacher
33. Pilot (Airplane)
34. Policeman
35. Mail Carrier
36. Professor
37. Painter
38. Writer
39. Secretary
40. Steward or Stewardess
41. Dentist
42. Taxi Driver
43. Draftsman
44. Carpenter
45. Typist
46. Nurse (Male or Female)
47. Fisherman
48. Garbageman
49. Storekeeper
50. Singer

CHOICE PATTERN ITEMS--FREE TIME ACTIVITIES

1. Automobile racing
2. Watching automobile races
3. Driving a car
4. Playing basketball
5. Watching basketball games
6. Club meetings
7. Checkers
8. Dancing
9. Eating
10. Bicycling
11. Going to movies
12. Photography
13. Golf
14. Running
15. Hunting
16. Playing cards
17. Camping
18. Puttering around
19. Reading
20. Model building
21. Visiting a museum
22. Collecting coins
23. Playing an instrument
24. Going to concerts
25. Going to night clubs
26. Riding a horse
27. Record playing
28. Collecting stamps
29. Radio listening
30. Traveling
31. Skating
32. Chess
33. Painting
34. Skiing
35. Crossword puzzles
36. Drawing
37. Watching TV
38. Tennis
39. Woodworking or other handwork
40. Acting in amateur plays
41. Going to plays
42. Gardening
43. Going out with a friend
44. Collecting sugar sacks, match books, etc.
45. Fishing
46. Playing football
47. Watching football games
48. Walking
49. Sailing
50. Swimming

CHOICE PATTERN TEST
(Occupations)

Name____________________

School__________________

Positive Choices (Item numbers and explanation)

A______________________________

B______________________________

C______________________________

D______________________________

E______________________________

F______________________________

G______________________________

H______________________________

I______________________________

J______________________________

Ungrouped__________________________

Negative Choices

A______________________________

B______________________________

C______________________________

D______________________________

E______________________________

F______________________________

G______________________________

H______________________________

I______________________________

J______________________________

Ungrouped__________________________

No Opinion Items (numbers)__________________

Comments:

Time__________

CHOICE PATTERN TEST
(Free-Time Activities)

Name ____________________

School ____________________

Positive Choices (Item numbers and explanation)

A ____________________

B ____________________

C ____________________

D ____________________

E ____________________

F ____________________

G ____________________

H ____________________

I ____________________

J ____________________

Ungrouped ____________________

Negative Choices

A ____________________

B ____________________

C ____________________

D ____________________

E ____________________

F ____________________

G ____________________

H ____________________

I ____________________

J ____________________

Ungrouped ____________________

No Opinion Items (numbers) ____________________

Comments:

Time ____________

Instructions for Check List - General Considerations

Before beginning the task of filling in the check list, read through the whole protocol, referring to the list of occupations to note which items the subject has combined under each label. In most cases the check list can be filled in from the subject's verbal responses alone, but on some instances it helps to know what he is talking about when he describes a group. (For example, on one record the response, "They involve people. I like people," could be seen to refer to audience response rather than to social service when one noted that it was "Actor" and "Singer" he put in this group.)

It is not necessary that every response be rated. Some of them will not fit into this system of classification. The procedure is to start with the check list item and examine the protocol for evidence of its occurrence rather than to examine each of the subject's responses and try to classify it somewhere. The question to which the research is directed is: What kinds of thinking does this person express in his choice pattern protocol?

In cases of doubt as to whether an item should be checked, where the evidence is not clear as to whether or not the subject was expressing some particular thing, it is better not to check it unless there is some way of resolving the doubt about what he meant from the context.

It is not anticipated that every subject will have something checked in every section. Some may have only General Choice Strategies, some only Values, some a combination of only two of the main classes of response.

Special Instructions for Occupations

General Structure - Numerical Indices

Self-explanatory.

General Characteristics of Thinking

Evidence of uncertainty:

The principal source of evidence here is the interviewer's comments. However, evidences of erasure or crossing out, or things the subject himself says may lead to the checking of one or more of these items in some cases.

Evidence of lack of sophistication in conceptual structure:

For a group to be classified as Chaining, there must be a cleavage in time or space between the items of which it is composed, e.g., fisherman, cook, electrician. "The fisherman catches a fish, the cook fries it, and the electrician comes in to repair the stove."

Linking dissimilar activities by location or situation is checked if all the activities occur in the same place and are in some sense related to one another, e.g., captain, cook, sailor. "All on a ship," or "All necessary to keep a ship going."

Check Deficiency in synthesis if more than 15 out of the 50 are left as singlets, unless the finely differentiated explanations given for each indicate that they are essentially "groups of one."

Check Deficiency in analysis if there are not more than four groups altogether (positive plus negative) unless the clarity of the explanation for the grouping constitutes convincing evidence that a clear concept is really involved.

NOTE: In case there is strong qualitative evidence for either of these deficiencies, it may be checked even though the arbitrary standards above have not been met.

Check Multiple reasons if more than one of the groups has more than one reason given for it. Do not check it if what the subject says represents different ways of stating the same concept rather than separate concepts.

Choice Strategies

Examine the first page of the interview blank before the choice pattern pages for spontaneous expressions of the influence of adults or of peers on choices and plans.

Check Labeling on basis of feeling in cases where the subject explains one or more groups by saying only things like "I like them" or "I don't like any of these." If he elaborates on the statement, with or without the interviewer's prodding, and tells why he likes or dislikes them, do not check it.

Check Stereotyped Image only if the person explicitly states that the group represents a kind of person he does or doesn't admire. Examples: "Beatnik type things," "Roosevelt boys don't do things like that."

Check the Self-awareness items only if the subject actually refers to qualities and experiences as aspects of his self.

Examples: "I don't have enough talent for things like that."
"I have always been good at sports."
"I worked in an office last summer and know I can do this kind of work well."

Just to refer to likes and dislikes without this comment on one's own individual characteristics does not warrant a check here.

Examples of things not to be checked:
"I like working with my hands."

"I don't like to read."

Values

What are to be identified under this heading are general qualities the person sees as desirable for a good life--in Smith's terms, the desirable rather than the simply desired. Defined in this way, a value is always positive, but it may be inferred from either choices or rejections. For example, the grouping together a set of professional occupations and explaining one's choices of them on the grounds that they pay well would warrant a check for Economic returns, but so would the grouping together of a set of clerical occupations and explaining one's rejection of them on the grounds that the pay is low. Thus no distinction between choices and rejections need be made in checking values. If the subject presents any evidence that he considers the quality to be desirable in a job, check it.

For some of the values, Way of life, Surroundings, and Associates, you are asked not only to check the item but to specify what aspect of it or particular kind of situation the person wants for his life. For example, Way of life might mean travel, comfort and ease, or family life in the country. Surroundings might mean outdoors, a clean office, or a gift shop full of beautiful things.

In some instances, the listed values may be difficult to distinguish from one another. The following guidelines are to be used:

Creativity does not necessarily involve beauty in the things created. The emphasis is on newness, originality.

Esthetics does not necessarily involve the making of anything new. The emphasis is on beauty, quality, good design. While some subjects will express both these values in one of their groupings, others will express only one of them.

Achievement refers to one's own sense of accomplishment, not to recognition from other people.

Management of people refers to activities through which other people's efforts are organized and directed. If the subject simply says he likes to take "responsibility," write in "Responsibility" under "Others" rather than to check "Management."

Way of life and Surroundings may be difficult to distinguish in some instances. If the emphasis seems to fall on some aspects of the role or activity of the worker, check "Way of life." If the emphasis is on the physical environment, check "Surroundings." Occasionally a response will express both values.

Under Others, write in any value for which you find evidence that does not appear on the list.

Interests

We are differentiating interests from values by viewing interests as simply likes or dislikes for various kinds of school subjects, fields of work, and activities. These, as distinguished from values, are bipolar. A person can react either positively or negatively to each of them. Generally speaking, evidence about what a person likes will come from his choices, evidence about what he dislikes from his rejections, but there are exceptions to this. Whichever section of the data sheet the information comes from, check in the Likes column if he indicates that he likes this kind of thing, and check in the Dislikes column if he indicates that he dislikes it.

Do not check one of these simply because a person includes an item among his choices. Choosing Scientist, for example, is not evidence for an interest in science unless the person explicitly says that the choice is on this basis.

Without such an indication the choice might represent prestige or money values, a masculine sex role, or a stereotyped image.

There may be other interests indicated on some papers, and in some cases there may be variations on these, a liking for jazz music, for example. Note such modifications where they occur.

If a grouping has been accounted for on the basis of a value, the presumption is that an interest will not be checked for that group. If it appears that both kinds of choice determiners are involved, or if it is not clear which predominates, look at the combination of items in the group. "Writer" plus "Journalist," for example, is more likely to represent an interest than "Writer" and "Artist" which suggests a "creativity" value. Do not check both a value and an interest for the same group unless the occupations classified in the group clearly represent the same kinds of activity and the subject explicitly says both that the security, prestige, creativity, surroundings, or the like, appeal to him and that he enjoys the activity itself.

Check List for Analysis of Choice Pattern Characteristics - Occupations

General Structure - Numerical Indices

_____Number no opinion

_____Number ungrouped

_____Number of positive items

_____Number of positive groups (2 or more items)

_____Number of negative items

_____Number of negative groups (2 or more items)

_____Mean socio-economic index for items chosen

_____Number of times any one label is repeated

_____Number of different labels repeated at least once

General Characteristics of Thinking

Evidence of uncertainty about:

_____Positive and negative sorting

_____Grouping

_____Labeling

Evidence of lack of sophistication in conceptual structure, as shown by:

_____Chaining. Linking of items by a sequence of associations.

_____Linking dissimilar activities by location, setting, or situation.

_____Deficiency in synthesis. Many ungrouped items, with no good reason for not grouping them.

_____Deficiency in analysis. A few large heterogeneous groups with inadequate reasons for not separating them.

Miscellaneous:

_____Multiple reasons for some groupings.

Choice Strategies

as shown in:

Choices Rejections

______ ________ Influence of adults

______ ________ Influence of peers

______ ________ Labeling purely on basis of feeling, without elaboration of reasons

______ ________ Reference to sex roles

______ ________ Reference to age roles

______ ________ Reference to level of education required

______ ________ Stereotyped image of some kind of person

Self-Awareness, as shown by:

______ ________ Evaluation of own abilities, talents, or deficiencies

______ ________ Evaluation of own personality traits

______ ________ Reference to own past experience

Values (General qualities one sees as desirable)

Work Values - Intrinsic

_____ Altruism. Doing good to others.

_____ Creativity. Producing or generating new ideas, designs, etc.

_____ Independence.

_____ Intellectual stimulation.

_____ Esthetics. Working with beautiful things.

_____ Achievement.

_____ Management of people.

Work Values - Extrinsic - Rewards

_____Way of life. Specify: ______________________________

_____Security

_____Prestige

_____Economic returns. Money

_____Recognition, admiration, or popular acclaim

Work Values - Extrinsic - Concomitants

_____Surroundings. Specify: ______________________________

_____Associates. Specify: ______________________________

_____Supervisory relations

_____Variety

Others:

_____

_____

_____

_____

_____

Check List for Occupations

Interests (Likes or dislikes for specific kinds of school subjects, work, or activity)

Likes Dislikes

____ ______ Science
____ ______ Mathematics
____ ______ Writing
____ ______ Reading
____ ______ Medicine
____ ______ Teaching
____ ______ Law
____ ______ Engineering
____ ______ Office work
____ ______ Sales or store work
____ ______ Social or personnel work
____ ______ Service (stewardess, beautician, barber, etc.)
____ ______ Mechanics - technology
____ ______ Music
____ ______ Art - drawing, painting
____ ______ Handwork, crafts
____ ______ Driving cars and other vehicles
____ ______ Sports
____ ______ Cooking
____ ______ Sewing
____ ______ Travel
____ ______ Airplanes
____ ______ Ships and sea

Others:

____ ______
____ ______
____ ______
____ ______

Instructions for Check List - General Considerations

Before beginning the task of filling in the check list, read through the whole protocol, referring to the list of free time activities to note which items the subject has combined under each label. In most cases the check list can be filled in from the subject's verbal responses alone, but on some instances it helps to know what he is talking about when he describes a group. (For example, the response "Going different places" would be checked for interest in travel if it referred to item 30, "Traveling," but it would be checked for interest in driving if it referred to item 3, "Driving."

It is not necessary that every response be rated. Some of them will not fit into this system of classification. The procedure is to start with the check list item and examine the protocol for evidence of its occurrence rather than to examine each of the subject's responses and try to classify it somewhere. The question to which the research is directed is: What kinds of thinking does this person express in his choice pattern protocol?

In cases of doubt as to whether an item should be checked, where the evidence is not clear as to whether or not the subject was expressing some particular thing, it is better not to check it unless there is some way of resolving the doubt about what he meant from the context.

It is not anticipated that every subject will have something checked in every section. Some may have only General Choice Strategies, some only Values, some a combination of only two of the main classes of response.

Special Instructions for Free Time Activities

General Structure - Numerical Indices

Self-explanatory.

General Characteristics of Thinking

Evidence of uncertainty:

As in the occupations section, use the interviewer's comments as the principal source of evidence with regard to these items, but if erasures or things crossed out or changed seem to point to uncertainty, check the appropriate item.

Evidence of lack of sophistication in conceptual structure:

For a group to be classified as Chaining, there must be a cleavage in time or space between the items of which it is composed, e.g., going out with a friend, going to movies, eating. "First you go downtown, then you go to a movie, and then you go to a restaurant to eat."

Linking dissimilar activities by location or situation is checked if all the activities occur in the same place and are in some sense related to one another, e.g., Eating, watching TV, and card playing, "Things you do at home."

Check Deficiency in synthesis if more than 15 out of the 50 are left as singlets, unless the finely differentiated explanations given for each indicate that they are essentially "groups of one."

Check Deficiency in analysis if there are not more than four groups altogether (positive plus negative) unless the clarity of the explanation for the grouping constitutes convincing evidence that a clear concept is really involved.

NOTE: In case there is strong qualitative evidence for either of these deficiencies, it may be checked even though the arbitrary standards above have not been met.

Kinds of distinctions:

If the person uses one of these distinctions as a basis for grouping in his choices, rejections, or both, check it whether or not he bases any of his choices on it. "Difficult" vs. "easy" refers to the complexity of the activities rather than to the amount of effort they require.

Miscellaneous:

Check Multiple reasons if more than one of the groups has more than one reason given for it. Do not check it if what the subject says represents different ways of stating the same concept rather than separate concepts.

Subjects who like to combine free time activities--e.g., "Reading" and "Listening to the radio," or "Eating" and "Going out with a friend," are quite explicit about this in accounting for their groupings. If in doubt, don't check it.

Choice Strategies

Examine the first page of the interview blank before the choice pattern pages for spontaneous expressions of the influence of adults or of peers on activities and use of leisure time.

Check Labeling on basis of feeling in cases where the subject explains one or more groups by saying only things like "I like them" or "I don't like any of these." If he elaborates on the statement, with or without the interviewer's prodding, and tells why he likes or dislikes them, do not check it.

Check Stereotyped Image only if the person explicitly states that the group represents a kind of person he does or doesn't admire. Examples: "Beatnik type things," "Roosevelt boys don't do things like that."

Check Self-awareness items only if the subject actually refers to qualities and experiences as aspects of his self.

Examples: "I don't have enough talent for things like that."

"I have always been good at sports."

"I played on a baseball team last summer."

Just to refer to likes and dislikes without this comment on one's own individual characteristics does not warrant a check here.

Examples of things not to be checked:

"I like working with my hands."

"I don't like to read."

If a subject simply justifies the placement of a particular item in a group on the basis of some specific experience, this does not constitute sufficient evidence to check "Reference to experience."

Values

What we are trying to identify here are the qualities the subject sees as desirable for a good life. In some cases, it seems to be necessary to phrase this idea negatively--e.g., "avoidance of danger." Your check mark indicates that a particular value is expressed somewhere in the record. You need not distinguish between values expressed in the choices and values expressed in the rejections. For example, to form a positive group consisting of "Gardening," "Reading," and "Record playing" and characterize it as being safe would merit a check mark for "avoidance of danger," but so would forming a negative group of "Automobile racing," "Hunting," and "Football" and characterizing it as being dangerous. A check mark simply indicates that the value is present.

Add other values if you run into some not included in this list. In some cases, for example, "avoidance of effort" seems to fit better than "avoidance of difficulty."

Interests

As distinguished from values, interests refer to specific kinds of things the subject enjoys or does not enjoy. Just sorting an item into the positive or negative pool does not warrant a check mark. The subject must explicitly say that he likes or dislikes the activity in question in order for it to be checked under interests. Check in the Likes column if there is evidence from either choices or rejections that he likes the activity. Check in the Dislikes column if there is evidence from either the choices or rejections that he dislikes it. Where the evidence comes from in the record is not important; the direction of the subject's feeling about the item is. Feel free to add to this list in individual cases and to change items slightly in order to make them fit what a subject was expressing.

Check List for Analysis of Choice Pattern Characteristics - Free Time Activities

General Structure--Numerical Indices

_____Number no opinion

_____Number ungrouped

_____Number of positive items

_____Number of positive groups (2 or more items)

_____Number of negative items

_____Number of negative groups (2 or more items)

_____Number of times any one label is repeated

_____Number of different labels repeated at least once

General Characteristics of Thinking

Evidence of uncertainty about:

- _____Positive and negative sorting
- _____Grouping
- _____Labeling of groups

Evidence of lack of sophistication in conceptual structure, as shown by:

- _____Chaining. Linking of items by a sequence of associations.
- _____Linking dissimilar activities by location, setting, or situation.
- _____Deficiency in synthesis. Many ungrouped items, with no good reason for not grouping them.
- _____Deficiency in analysis. A few large heterogeneous groups with inadequate reasons for not separating them.

Kinds of distinctions:

- Work vs. play
- _____Active vs. passive
- _____Difficult vs. easy
- _____Outdoor vs. indoor
- _____Alone or with others

General Characteristics of Thinking (continued)

Miscellaneous:

_____Multiple reasons for groupings.

_____Likes to do more than one thing at a time.

Choice Strategies

as shown in:

Choices Rejections

_____ _____ Influence of adults

_____ _____ Influence of peers

_____ _____ Labeling purely on basis of feeling without elaboration of reasons

_____ _____ Reference to sex roles

_____ _____ Reference to age roles

_____ _____ Stereotyped image of some kind of person

Self Awareness, as shown by:

_____ _____ Evaluation of own abilities, talents, or deficiencies

_____ _____ *Evaluation of own personality traits*

_____ _____ Reference to present or past experience

Values (General qualities one sees as desirable)

_____Avoidance of boredom

_____Excitement, adventure

_____Danger, risk

_____Avoidance of danger, risk

_____Avoidance of violence, killing

_____Effort, including thinking

_____Organization, rules, structure

Values (Continued)

____Relaxation, freedom from constraints

____Sociability. Enjoying company of people.

____Solitude. Doing things alone.

____Independence. Doing things on own responsibility.

____Leadership

____Followership

____Challenge, difficulty

____Avoidance of difficulty

____Competition

____Avoidance of competition

____Competence, skill, constructiveness

____Activity, participation

____Passivity, spectatorship

____New experience. Self-development.

____Cultural - intellectual values

____Anti-intellectual values. Avoidance of cultural activities.

Other:

____

____

____

____

____

____

Check List for Free Time Activities

Interests (Likes and dislikes for specific kinds of activities)

Likes Dislikes

____ ________ Sports, participation

____ ________ Sports, watching

____ ________ Games other than sports

____ ________ Nature

____ ________ Water activities--sailing, boating, etc.

____ ________ Driving

____ ________ Animals

____ ________ Hobbies

____ ________ Making collections

____ ________ Music--performance

____ ________ Music--listening

____ ________ Art, drawing

____ ________ Crafts, handwork

____ ________ Participating in plays

____ ________ Watching plays

____ ________ Dancing

____ ________ Parties

____ ________ Night clubs

____ ________ Belonging to clubs and organizations

____ ________ Conversation

____ ________ Travel

____ ________ Reading

Other

____ ________

____ ________

____ ________

APPENDIX D

INFORMATION ABOUT VALUES Q-SORT

Development of the Values Q-Sort Decks

After defining roughly what the domain of values would be, we moved on to the development of operational measures for studying values. Ultimately we would like to detect and infer values from behavioral observations of people in daily living or in experimental choice situations. However, for practical reasons, a verbal reporting technique seemed useful as an early step. The Q-sorting procedure was chosen because it would allow the presentation of a large number of statements which the subject would then be required to arrange in order of preference. The Q-sort in itself is a choice situation. After these general decisions the following steps were followed in developing the Q-sorts:

A. In the interest of diversity and future plans for cross-cultural usage, items were collected from a large number of sources, including most of the existing assessment devices. In addition, we gave to 9th graders an open-ended questionnaire which asked them to fill out incomplete sentences and answer the questions "Who are you?" and "What are you?" We wrote items based on their answers. Also the two investigators[1] wrote additional items based on readings or other experiences and made use of a previous Q-deck written by a student[2] working on items for a study of Eastern and Western philosophies. In total over 500 items were collected in the original pool, all of them phrased in the form of declarative sentences.

B. The entire item pool, each item on separate cards, was given to three children from 12 to 14 years old to sort into "agree," "disagree,"

---

[1] At this point, the investigator assisting Sundberg in developing the Values Q-sort was Nancy Chapman, to whom we wish to express our appreciation.

[2] The authors wish to thank Donald Dugger for his contributions.

"neutral" and "don't know" categories. The purpose was to see if they could understand and come to a decision on these statements. An inquiry was conducted with "don't know" answers and these items were either revised or thrown away.

C. Independently, the two investigators sorted the large pool of items into two subdecks: Personal Directions and Personal Assumptions. Items which did not fit in either group or on which there was disagreement were discussed and most of them discarded.

D. Again independently, the two investigators sorted each of the two decks into content categories as a step toward checking on duplication of content. These categories had been derived from theoretical considerations and from impressions gained in sorting the cards. For the Directions deck the categories consisted of orientations toward experiencing, knowing, acting, achieving, socializing, caring for others, gaining prestige and power, gaining money and materialistic success, working with things, creativity, security, and balance and diversity, along with a miscellaneous category. For the Assumptions deck the categories were as follows: self-directed, other-directed, authority and tradition-directed, attitudes toward choice and work, rules for behavior, moral injunctions, and hypotheses about nature and society. Disagreements in sorting were discussed and items were placed in content piles accordingly or discarded.

E. Within the content categories, the investigators scrutinized all items and eliminated as many as possible or rewrote them to comply with the following instructions: (1) Aim to reduce the two decks ultimately to 50 or 75 each. Accordingly within content categories numbers should be reduced to about 4-8 items in the Directions deck and 10-15 in the Assumptions deck. (2) Choose items or rewrite items for simple language. (3) Eliminate duplication of similar content. (4) Give preference to items which might show cross-cultural differences. (5) Give preference to items concerned with choice, planning, interests, work, leisure activities, etc.

F. Through the above procedures the original pool was now reduced to a Directions deck of 70 cards and an Assumptions deck of 120 cards. At this point, the preliminary try-out of the Q-sorting procedure was carried out with a small number of adolescents aged 12 to 14. Individual administrations were followed by questions and discussion. The subjects were asked to set aside those items which they could not understand. Their comments on these were noted so that the items could be rewritten. The subject's task was to sort each deck into a seven-pile quasi-normal distribution with specified numbers per pile. Pile 1 indicated that one strongly disagreed with the item, pile 7 that one strongly agreed. Pile 4 was a neutral location. The test was administered to six neighborhood boys and girls and later, after some revision, to three delinquent boys and three non-delinquent boys.

G. On the basis of the subjects' expressed difficulties in understanding them, items were either eliminated or rewritten. Tables were also constructed showing the pile numbers each item had been given. Within content categories the number was again reduced by selecting those items showing wide rather than narrow dispersions of choice, on the assumption that we would get at individual differences better if there was opportunity for variation of opinion. At this point the decks reached their final size: 40 items in the Directions deck and 50 in the Assumptions deck.

H. Fortunately the Dutch research assistant[3] spent some time in the United States during the summer of 1963. She administered the Q-sorts to a variety of neighborhood adolescents and raised questions about certain items. These were simplified and made to conform with the Dutch translation she was making. She administered this Dutch form to the Dutch sample during the school year 1963-64. Unfortunately it is not exactly like the English version because of the one remaining step taken after her work was done.

---

[3] Hans van Hourik-Broekman

I. Further informal work with adolescents in Eugene suggested that the reading level of the items might still be too high. Accordingly the items were rated for readability using a system recommended by Dr. Walter Hill, Associate Professor of Education, University of Oregon. Items were rewritten and simplified so that the present reading level is below the 7th grade level for both Q-sort decks. All Directions statements were changed from third to first person.

INSTRUCTIONS FOR VALUES Q-SORTS

a. Alternate the order of administration of Personal Assumptions (QA) and Personal Directions (QD) from one subject to another.

b. Shuffle each deck before administration.

c. Introduction to the first Q-sort:

> "Here is a set of cards each with a different statement on it. You are to read each card and place it on this board in such a way that you show how much you agree with it or disagree with it.
>
> "On the board there are seven columns with a certain number of cards to go in each one. For this set use the number of cards indicated by the ______ color. (Red for QD and blue for QA.) Notice there are to be three cards in the column indicating 'Most strongly agree' and three 'Most strongly disagree' (pointing to the two ends of the board and the numbers indicated in the appropriate color). In between the two ends there are various shades of agreement: ___ cards for 'strongly disagree' and 'strongly agree,' ___ cards for 'moderately disagree' and 'moderately agree' and finally ___ cards in the middle for 'neutral' or 'mixed' reactions. This is the way the cards are to end up. Is that clear?"
>
> "Now it is sometimes kind of hard to know how to answer these statements. So as you read them the first time, put aside all of those you don't understand or can't decide on. With those you have opinions on, first sort them roughly into the columns. After you're through with the first rough sort, show me which ones are unclear or difficult to decide on. Then we will go ahead to put them into the exact columns."

d. Explanations and recording of poorly understood items:

> At any time if the subject asks a question about the meaning of a card or doesn't understand it, record the number of the card at the bottom of the record sheet. Also at the end of the rough sort, record the numbers of cards he doesn't understand. You may explain individual words or brief phrases in simpler parallel terms. If so, record what you said (using the back of the sheet if necessary) along with the number of the item. Do not interpret the card for him. The object is to avoid influencing his choice. If he just does not understand after simple explanations, tell him something like this: "The meaning of the statement and the choice must be left up to you. If it just isn't clear to you, put it in the center column."

e. Instructions to use after the first rough sorting:

> "You have finished sorting them roughly. Now you must get the exact number indicated for each column. People usually find it best to make sure first that the extreme columns each contain the

three cards they feel most strongly about. Then move in from each end to the next most strongly felt ones, getting the right number and so on, working from each end into the middle."

f. Recording procedures:

After the subject has finished the sort, record the column number he has chosen beside the item number. You might have him read the item numbers of Column 1 to you, then Column 2, etc. Be very careful about this transcription and check the record sheet at the end to see that every item number has a column number beside it. Then move on to the inquiry at the bottom of the record sheet. Record the numbers of the items in each of the extreme columns, read them to him and ask why he most strongly agrees or disagrees for each item, recording his answers as nearly verbatim as possible. If he should change his mind or indicate he has made a mistake, write that down, but do not let him redo the whole Q-sort unless there is a serious misunderstanding. Explain somewhat as follows: "Well, you see it differently now. Let's not go through the whole sorting process again unless it makes a very great difference. Where would you have put it as you see it now?" If he does feel so strongly that he must redo the whole sort, let him do this but quickly move cards from column to column as he rereads them. The attitude here is that we could quibble about little meanings for years; it is the general placement of the item from first understandings or impressions that is important.

g. Time matters:

There will be individual differences in the time taken for the sorts. After about 10 minutes, if the person is not making the average amount of progress, tell him something like this: "Excuse me. I know it's hard to decide on some statements. Just put them aside to the end. Also for this purpose, first impressions are often best. Just read the statement and place it quickly and roughly in the column you want. Don't take very much time." Be sure to record the total time taken to finish the sort (before you start the inquiry) and indicate whether you urged or not by writing by it "U once" or "U twice," etc.

h. The second Q-sort:

"Now we have another set of cards. We will do exactly the same thing with them. But this time use the numbers indicated by the ____ color for sorting them into columns. Go right ahead."

i. Shuffle each deck after you are finished with it.

VALUES Q-SORT

PERSONAL DIRECTIONS ITEMS

1. I like beautiful things, even if they are not useful.
2. I feel that you can only live once; so enjoy it while you can.
3. I believe I could learn a lot and become wise just by being alone and thinking a lot.
4. I want to enjoy the pleasure of just living--of eating good food, resting, and talking with friends.
5. I would like to be a scientist.
6. It is important to me to get all the schooling and learning that I can.
7. I want to do work which will advance knowledge.
8. I enjoy activities and adventure.
9. Sports are important to me.
10. Doing things is more important than just thinking. Action is better than thought.
11. I want to get around a lot to see many places and do many different things.
12. I could have a pleasant life just living in one place and not traveling much.
13. I like difficult work.
14. I never want to do something unless I can do it well.
15. I would like a job that would give me a chance to show what I can do and how well I can do it.
16. I believe that a person who works very hard to get ahead is likely to be unhappy.
17. I try to keep myself from saying cruel things to another person, even if he makes me very angry.
18. Being with people and having parties is a good way to spend my free time.
19. I believe one of life's greatest pleasures is having many good friends and few real enemies.
20. My first duty is to myself rather than to others.

21. Family life is important to me.

22. The good feeling I get from helping people more than makes up for the trouble.

23. No matter what I do in life I want to do good things for other people.

24. I want to be with people who are friendly and kind even if they are not very intelligent.

25. I do not expect young people to have ideas about important political and social problems.

26. I enjoy taking charge of a group of people and getting them working.

27. I would like to be well known and famous.

28. In deciding on a job, I would look at the chances for getting ahead.

29. Some day I would like to become very well known in my field of work.

30. I judge a job by how much money it brings in.

31. Free time to do what I want is more important than the kind of work I would do to earn my living.

32. I would rather have low pay while working at something I enjoy than have a high salary and do something I dislike.

33. I want a job that nearly everybody looks up to and admires.

34. I believe that the success of a country can best be measured by the things it has made, like the number of cars or machines it manufactures.

35. Variety and change are very important for me.

36. I like to be free to express myself; it makes me feel good.

37. I am interested in things that are strange and unknown.

38. The ideal life for me is a balanced one--not too much of one thing or another--a "happy medium."

39. I try to have religious ideas enter into every choice I make in life.

40. I would rather be known as a good person than a wise person.

VALUES Q-SORT

PERSONAL ASSUMPTIONS ITEMS

1. Man and nature are one; one does not control the other.
2. Man should put nature to work for him as, for example, in building dams and roads.
3. The history of man is a record of progress and improvement which is likely to continue.
4. We have more crime today than we used to because we let criminals off too easily.
5. If the government gave people the things they need for life, such as food and houses, most people would not work.
6. People all over the world are pretty much alike in what they think is right and wrong.
7. Most people can be trusted.
8. Old age is better than youth.
9. Students are as much to blame as teachers for poor schools.
10. People are nice to others because it makes them feel good to give happiness to others.
11. People are nice to others because they want to have friends when they need them.
12. If you do something good for someone else, sometime some other person will help you.
13. Some people never feel any desire to do wrong things.
14. Some people are born better than others.
15. Human nature is neither good nor bad.
16. To think about doing something wrong is just as bad as doing it.
17. The best way to keep from doing something wrong is to stay away from temptation.
18. The worst thing about doing something wrong is that you are likely to get caught.
19. Sometimes it is all right to tell a lie.
20. One should feel sorry for a criminal even though his crime is a terrible one.

21. Anybody might become a criminal if he grew up under very poor conditions.

22. Nearly everyone could create new and useful things if he had a chance.

23. The way to get the most out of life is to work hard when you are young.

24. In the long run people do get what they deserve in this world.

25. Many of the unhappy things in people's lives are due to bad luck.

26. What happens to me is my own doing; what I do is up to me.

27. There's not much sense in getting excited about what is wrong in the world since you cannot do much about it anyway.

28. What happens in our lives depends mostly upon things outside ourselves, not on us.

29. Man is an active chooser, not a passive receiver, in the game of life.

30. The history of a whole country sometimes depends upon the decisions made by one man.

31. A person should make choices on the spur of the moment without thinking or pondering over them.

32. A person's place in life is about the same as his father's and mother's. If a boy's father is a factory worker he should expect to be a factory worker too.

33. In choosing his life work, a person should get to know his own strong and weak points.

34. I should make up my mind by myself because no one else knows my own needs and abilities as well as I do.

35. One should never do anything that goes against one's parents' wishes.

36. Young people should try to make their own choices and plans about their lives rather than be guided by their parents' ideas.

37. Every person should try to be different from other people--to find his own special way of life.

38. A person should expect himself to be capable of doing almost everything.

39. I believe in making a plan for my life and following it no matter what happens.

40. It is hard to plan ahead because every day brings something new that must be handled as it happens.

41. Plans made by a group are likely to be better than plans made by one person alone. "Two heads are better than one."

42. Life is like a game. If you play by the rules, you are likely to win the prize.

43. The trouble with most children is that their parents are too easy with them.

44. One should believe what is taught by schools and good books; they should be accepted as right.

45. Right and wrong are as different as black and white.

46. In making decisions in the real world, I believe few things are all good or all bad.

47. The only way to judge if something is true is to find out if most people believe it.

48. It is best to keep out of situations which call for the expression of an opinion that may be unpopular.

49. In order to live a good life a person must develop self-control.

50. All things point to a God whose law governs the universe.

QD Q-Sort, Personal Directions
Possibilities Research Project--Tyler, Sundberg

Name________________________
Place________Date________Admr_____
Time: Start:________Finish:________

Item No.	Pile No.	Item No.	Pile No.	Item No.	Pile No.	Item No.	Pile No.
1.	___ ___ ___	11.	___ ___ ___	21.	___ ___ ___	31.	___ ___ ___
2.	___ ___ ___	12.	___ ___ ___	22.	___ ___ ___	32.	___ ___ ___
3.	___ ___ ___	13.	___ ___ ___	23.	___ ___ ___	33.	___ ___ ___
4.	___ ___ ___	14.	___ ___ ___	24.	___ ___ ___	34.	___ ___ ___
5.	___ ___ ___	15.	___ ___ ___	25.	___ ___ ___	35.	___ ___ ___
6.	___ ___ ___	16.	___ ___ ___	26.	___ ___ ___	36.	___ ___ ___
7.	___ ___ ___	17.	___ ___ ___	27.	___ ___ ___	37.	___ ___ ___
8.	___ ___ ___	18.	___ ___ ___	28.	___ ___ ___	38.	___ ___ ___
9.	___ ___ ___	19.	___ ___ ___	29.	___ ___ ___	39.	___ ___ ___
10.	___ ___ ___	20.	___ ___ ___	30.	___ ___ ___	40.	___ ___ ___

Formula: $r = 1 - \frac{\Sigma D^2}{216}$

Inquiry:

a. About the top 3 items: Why did you place these the highest?

_____

_____

_____

b. About the bottom 3 items: Why did you place these the lowest?

_____

_____

_____

c. Any you did not understand?

QA Q-Sort, Personal Assumptions
Possibilities Research Project--Tyler, Sundberg

Name ____________________
Place ________ Date ________ Admr ________
Time: Start: ________ Finish: ________

Item No.	Pile No.	Item No.	Pile No.	Item No.	Pile No.	Item No.	Pile No.
1.	___ ___ ___	14.	___ ___ ___	27.	___ ___ ___	39.	___ ___ ___
2.	___ ___ ___	15.	___ ___ ___	28.	___ ___ ___	40.	___ ___ ___
3.	___ ___ ___	16.	___ ___ ___	29.	___ ___ ___	41.	___ ___ ___
4.	___ ___ ___	17.	___ ___ ___	30.	___ ___ ___	42.	___ ___ ___
5.	___ ___ ___	18.	___ ___ ___	31.	___ ___ ___	43.	___ ___ ___
6.	___ ___ ___	19.	___ ___ ___	32.	___ ___ ___	44.	___ ___ ___
7.	___ ___ ___	20.	___ ___ ___	33.	___ ___ ___	45.	___ ___ ___
8.	___ ___ ___	21.	___ ___ ___	34.	___ ___ ___	46.	___ ___ ___
9.	___ ___ ___	22.	___ ___ ___	35.	___ ___ ___	47.	___ ___ ___
10.	___ ___ ___	23.	___ ___ ___	36.	___ ___ ___	48.	___ ___ ___
11.	___ ___ ___	24.	___ ___ ___	37.	___ ___ ___	49.	___ ___ ___
12.	___ ___ ___	25.	___ ___ ___	38.	___ ___ ___	50.	___ ___ ___
13.	___ ___ ___	26.	___ ___ ___				

Formula: $r = 1 - \frac{\Sigma D^2}{244}$

Inquiry:
a. About the top 3 items: Why did you place these the highest?

___

___

___

b. About the bottom 3 items: Why did you place these the lowest?

___

___

___

c. Any you did not understand?

4

APPENDIX E

DAILY ACTIVITY RECORD BLANK

DAILY ACTIVITY RECORD

Name: ______________________ School: ______________________

	Saturday	Sunday	Monday	Tuesday
7:00 to 7:30				
7:30 to 8:00				
8:00 to 8:30				
8:30 to 9:00				
9:00 to 9:30				
9:30 to 10:00				
10:00 to 10:30				
10:30 to 11:00				
11:00 to 11:30				
11:30 to 12:00				
12:00 to 12:30				
12:30 to 1:00				
1:00 to 1:30				
1:30 to 2:00				
2:00 to 2:30				

Turn Page Over

	Saturday	Sunday	Monday	Tuesday
2:30 to 3:00				
3:00 to 3:30				
3:30 to 4:00				
4:00 to 4:30				
4:30 to 5:00				
5:00 to 5:30				
5:30 to 6:00				
6:00 to 6:30				
6:30 to 7:00				
7:00 to 7:30				
7:30 to 8:00				
8:00 to 8:30				
8:30 to 9:00				
9:00 to 9:30				
9:30 to 10:00				
10:00 to 10:30				
10:30 to 11:00				
After 11:00				

APPENDIX F

SUPPLEMENTARY STATISTICAL INFORMATION--

POSSIBILITIES STUDY

1. Standard Deviations for Sex Groups--Equated Dutch and American Samples
2. Means for Socio-Economic Groups--Equated Dutch and American Samples
3. Standard Deviations for Socio-Economic Groups--Equated Dutch and American Samples
4. Standard Deviations for Sex Groups--Three American Samples.

Table F-1

Standard Deviations of Equated Groups of Dutch and American Boys and Girls on Items Listed, Checked, and Classified in Free Response Sections of Questionnaire

Questionnaire Variable	Dutch Boys SD N=24	Dutch Girls SD N=24	American Boys SD N=24	American Girls SD N=24
Occupations listed	10.05	9.24	8.64	6.53
Occupations checked	4.17	3.00	3.13	2.60
Free time activities listed	8.87	6.02	8.34	7.40
Free time activities checked	5.72	4.98	6.09	6.61
Total number of persons listed	4.90	3.29	3.51	2.35
Adults listed	5.63	4.33	3.44	3.72
Children listed	7.01	5.00	5.15	4.32
Family members listed	4.73	3.56	3.72	4.33
Cultural figures listed	4.61	3.46	4.79	4.37
Figures from history	2.33	2.81	4.23	2.43
Figures from literature	1.99	2.29	2.70	1.98
Figures from movies	2.32	2.70	3.49	3.50
Figures from television	5.38	4.68	4.50	3.54
Figures from sports	4.50	1.61	4.11	.85
Figures from government	3.17	2.39	2.83	2.03
Figures from other sources	4.45	2.41	1.19	1.12
Places to live listed	3.13	3.75	4.21	3.56

Table F-2

Means of Equated Samples of Dutch and American Subjects Grouped

into Three Socio-Economic Classes for Items Listed,

Checked, and Classified in the Questionnaire

Questionnaire Variable	Dutch Class 1 Mean N=12	Dutch Class 2 Mean N=18	Dutch Class 3 Mean N=18	Amer. Class 1 Mean N=12	Amer. Class 2 Mean N=18	Amer. Class 3 Mean N=18
Occupations listed	37.50	36.56	32.72	23.67	22.00	20.56
Occupations checked	5.17	5.11	4.00	5.42	4.39	5.17
Free time activities listed	25.08	20.06	19.61	27.83	25.56	23.61
Free time activities checked	14.75	10.67	9.94	16.50	13.33	15.50
Total number of persons listed	24.25	23.17	21.22	25.17	23.44	23.72
Adults listed	6.00	6.56	8.06	5.17	5.39	4.67
Children listed	18.25	15.67	13.17	20.00	18.06	19.06
Family members listed	3.25	5.78	4.94	3.83	4.28	4.06
Cultural figures listed	20.33	17.67	16.67	15.58	15.17	16.61
Figures from history	2.00	2.72	3.06	4.58	3.17	3.06
Figures from literature	2.25	1.06	1.33	3.08	1.94	2.39
Figures from movies	3.00	3.06	2.50	2.67	2.44	3.44
Figures from television	7.25	5.61	5.39	5.00	6.50	6.50
Figures from sports	.58	3.00	1.44	3.50	1.78	1.33
Figures from government	4.50	2.83	2.39	3.42	3.44	2.61
Figures from other sources	3.75	.83	1.69	1.00	.89	.78
Places to live listed	18.00	17.17	16.56	17.42	17.72	17.33

Table F-3

Standard Deviations of Equated Samples of Dutch and American

Subjects Grouped into Three Socio-Economic Classes for Items

Listed, Checked, and Classified in the Questionnaire

Questionnaire Variable	Dutch Class 1 SD N=12	Dutch Class 2 SD N=18	Dutch Class 3 SD N=18	Amer. Class 1 SD N=12	Amer. Class 2 SD N=18	Amer. Class 3 SD N=18
Occupations listed	8.19	9.86	10.08	5.96	9.64	6.24
Occupations checked	3.21	4.30	3.20	2.31	1.91	3.87
Free time activities listed	7.69	8.06	6.17	5.57	9.64	7.12
Free time activities checked	4.47	5.32	5.08	6.26	6.14	6.47
Total number of persons listed	3.25	2.66	5.41	1.03	3.48	3.20
Adults listed	4.63	5.15	5.08	3.30	3.85	3.61
Children listed	5.91	5.76	5.78	3.13	5.57	4.87
Family members listed	3.08	3.96	4.80	2.89	5.07	3.59
Cultural figures listed	2.90	3.96	4.50	4.58	5.04	4.13
Figures from history	1.91	2.14	3.39	5.02	2.92	3.04
Figures from literature	3.02	1.55	1.91	3.06	2.04	2.20
Figures from movies	2.34	2.96	2.26	3.17	3.75	3.47
Figures from television	4.79	5.08	5.16	3.41	4.09	4.63
Figures from sports	1.00	4.93	1.79	5.13	2.69	1.50
Figures from government	3.53	2.62	2.09	3.50	2.12	1.88
Figures from other sources	2.53	1.79	4.91	1.35	1.08	1.11
Places to live listed	3.81	3.54	3.75	3.68	4.14	3.90

Table F-4

Standard Deviations for Sex Groups

Three American Samples

Questionnaire Variable	North Bend Boys SD N=24	North Bend Girls SD N=24	Eugene Boys SD N=12	Eugene Girls SD N=12	Portland Boys SD N=12	Portland Girls SD N=12
Occupations listed	8.64	6.53	12.54	9.84	11.41	8.19
Occupations checked	3.13	2.60	7.70	3.53	2.19	3.63
Free time activities listed	8.34	7.40	10.18	9.26	4.84	6.83
Free time activities checked	6.09	6.61	7.70	9.32	5.42	5.82
Total number of persons listed	3.51	2.35	10.09	10.21	3.44	8.41
Adults listed	3.44	3.72	6.50	9.37	4.73	7.04
Children listed	5.15	4.32	7.63	9.20	4.84	9.61
Family members listed	3.72	4.33	3.02	3.99	4.75	2.84
Cultural figures listed	4.79	4.37	5.23	10.16	4.85	6.73
Figures from history	4.23	2.43	3.44	5.36	2.97	1.91
Figures from literature	2.70	1.98	4.68	8.53	2.92	3.55
Figures from movies	3.49	3.50	4.36	4.06	3.52	5.18
Figures from television	4.50	3.54	5.09	9.03	4.52	4.33
Figures from sports	4.11	.85	3.58	1.38	3.60	2.56
Figures from government	2.83	2.03	1.99	5.03	3.10	2.75
Figures from other sources	1.19	1.12	1.75	7.83	3.32	3.65
Places to live listed	4.21	3.56	5.15	9.74	7.30	4.14

APPENDIX G

SUPPLEMENTARY STATISTICAL INFORMATION--

DAILY ACTIVITY STUDY

1. Standard Deviations for Sex and Nationality Groups. Equated Dutch and American Samples.
2. Standard Deviations for Socio-Economic Groups. Three American Samples

Table G-1

Standard Deviations for Daily Activity Record Variables

Equated Dutch and American Samples

Variable	Dutch Boys SD N=23	Dutch Girls SD N=24	American Boys SD N=23	American Girls SD N=24
Active pastimes	8.30	3.87	7.13	2.73
Baby-sitting	.00	1.08	.42	2.96
Bed (In bed, sleeping, etc.)	4.45	5.69	8.22	6.08
Chores and housework	7.40	8.66	7.25	4.92
Church	2.94	4.51	3.07	2.82
Clubs and organizations	1.15	.00	.42	1.83
Conversation	2.30	4.73	3.23	3.82
Dancing and parties	3.04	2.40	.00	1.63
Downtown	1.97	2.01	1.86	2.73
Eating	5.75	4.75	2.90	2.71
"Goofing off"	.63	.28	2.42	2.58
Homework	7.33	6.06	7.38	7.12
Indoor, non-active games	5.52	2.43	1.62	2.02
Lessons and practice	1.34	1.67	1.27	1.53
Library	.00	.00	1.20	.45
Medical-dental	.21	.00	.65	.45
Movies and theatre	1.34	1.47	2.68	1.97
Part-time jobs	5.47	2.67	3.17	1.69
Personal care	1.74	1.95	2.71	2.48
Pets	2.75	.83	.00	.69
Quiet pastimes	3.92	3.53	1.95	2.19
Radio-phonograph listening	6.52	3.05	2.61	4.82
Reading	4.98	6.89	4.88	3.56
Religious lessons (at home, etc.)	1.12	.83	.42	.41
School	8.46	8.47	8.34	8.44
School activities	.00	.00	4.27	1.47
Spectator sports (live)	2.21	.20	3.21	2.75
Telephone	.00	.20	.21	1.14
Transportation	4.33	5.35	4.09	5.60
TV watching	7.37	4.49	11.36	10.12
Miscellaneous	3.47	2.17	3.20	1.82

Table G-2

Standard Deviations for Sex Groups on Three American Samples on Daily Activities

Variable	North Bend Boys SD N=23	North Bend Girls SD N=24	Eugene Boys SD N=11	Eugene Girls SD N=11	Portland Boys SD N=8	Portland Girls SD N=10
Active pastimes	7.13	2.73	11.66	2.88	8.08	3.56
Baby-sitting	.42	2.96	.90	2.84	.00	3.27
Bed (In bed, sleeping, etc.)	8.22	6.08	3.22	5.96	3.68	8.09
Chores and housework	7.25	4.92	2.91	4.27	3.38	5.90
Church	3.07	2.82	2.45	5.18	1.19	3.16
Clubs, organizations	.42	1.83	.00	8.28	.00	2.11
Conversation	3.23	3.82	2.79	3.73	1.07	5.25
Dancing and parties	.00	1.63	1.81	3.75	.00	.00
Downtown	1.86	2.73	1.04	2.48	2.83	5.59
Eating	2.90	2.71	2.54	2.17	3.65	2.36
"Goofing off"	2.42	2.58	3.54	1.99	.74	3.66
Homework	7.38	7.12	6.76	7.21	5.60	3.44
Indoor, non-active games	1.62	2.02	1.60	.00	.71	1.27
Lessons and practice	1.27	1.53	2.10	6.28	.00	1.26
Library	1.20	.45	.90	1.51	.00	1.08
Medical-dental	.65	.45	.00	.82	.00	.00
Movies and theatre	2.68	1.97	2.88	.00	3.94	4.00
Part-time jobs	3.17	1.69	4.13	1.94	16.84	5.69
Personal care	2.71	2.48	2.38	3.38	1.58	3.92
Pets	.00	.69	1.04	.30	.00	.42
Quiet pastimes	1.95	2.19	.60	2.44	6.50	2.60
Radio-phonograph listening	2.61	4.82	3.02	2.91	2.27	2.00
Reading	4.88	3.56	3.59	6.71	1.75	2.41
Religious lessons (at home, etc.)	.42	.41	.00	.00	.00	.32
School	8.34	8.44	2.89	2.28	4.02	1.90
School activities	4.27	1.47	2.58	3.00	.00	.32
Spectator sports (live)	3.21	2.75	.00	.00	.00	.00
Telephone	.21	1.14	.90	2.32	.74	1.84
Transportation	4.09	5.60	5.28	3.51	4.98	4.12
TV watching	11.36	10.12	11.14	5.41	10.90	9.78
Miscellaneous	3.20	1.82	3.07	3.22	10.73	2.36

APPENDIX H

SUPPLEMENTARY STATISTICAL INFORMATION--
CHOICE PATTERN STUDY

1. Means for Positive, Negative, and No Opinion Totals--Equated Dutch and American Samples.
2. Standard Deviations for Positive, Negative, and No Opinion Totals--Equated Dutch and American Samples.
3. F Values for Analysis of Covariance, Choice Pattern Totals. Equated Dutch and American Samples.
4. Check List Tabulation Frequencies--Values. Occupations. Equated Dutch and American Samples.
5. Check List Tabulation Frequencies--Values. Free Time Activities. Equated Dutch and American Samples.
6. Check List Tabulation Frequencies--Interests. Occupations. Equated Dutch and American Samples.
7. Check List Tabulation Frequencies. Interests. Free Time Activities. Equated Dutch and American Samples.
8. Check List Tabulation Frequencies--Values. Occupations. Portland and Eugene Samples.
9. Check List Tabulation Frequencies--Values. Free Time Activities. Portland and Eugene Samples.
10. Check List Tabulation Frequencies--Interests. Occupations. Portland and Eugene Samples.
11. Check List Tabulation Frequencies--Interests. Free Time Activities. Portland and Eugene Samples.
12. Item Analysis--Number of Positive Choices. Occupations. All Samples.
13. Item Analysis--Number of Positive Choices. Free Time Activities. All Samples.

Table H-1

Means for Choice Pattern Variables, Equated

Dutch and American Samples

	Dutch Boys Mean N=24	Dutch Girls Mean N=24	American Boys Mean N=24	American Girls Mean N=24
Occupations				
Positive items	14.25	13.42	21.46	15.25
Negative items	34.21	33.62	26.58	33.62
No opinion items	1.42	2.75	1.96	1.12
Free Time Activities				
Positive items	28.33	25.08	31.42	29.12
Negative items	19.88	21.83	16.67	19.54
No opinion items	1.79	2.88	1.92	1.33

Table H-2

Standard Deviations for Choice Pattern Variables,

Equated Dutch and American Samples

	Dutch Boys SD N=24	Dutch Girls SD N=24	American Boys SD N=24	American Girls SD N=24
Occupations				
Positive items	7.71	7.17	11.10	7.12
Negative items	8.15	8.63	11.58	7.69
No opinion items	5.30	4.74	6.21	2.35
Free Time Activities				
Positive items	9.31	5.38	8.54	7.56
Negative items	9.25	6.62	7.61	7.73
No opinion items	3.40	4.30	6.43	2.84

Table H-3

F Values for Choice Pattern Variables, Equated Dutch and American Samples

	Nationality	Sex	Interaction
Occupations			
Positive items	*6.86	*4.16	2.07
Negative items	*4.06	2.84	3.86
No opinion items	.35	.11	1.37
Free Time Activities			
Positive items	*4.37	2.26	.00
Negative items	2.42	1.53	.38
No opinion items	.67	.12	.99

* $P < .05$

Table H-4

Comparison of Dutch and American, Male and Female on Values--Occupations Check List

Item	Dutch Boys N=24	American Boys N=24	Dutch Girls N=24	American Girls N=24
Altruism	3	5	7	5
Creativity	2	3	6	4
Independence	0	4	1	1
Intellectual stimulation	0	4	0	0
Esthetics	0	1	4	1
Achievement	0	1	1	2
Management of people	0	1	0	1
Way of life	3	6	7	6
Security	2	2	2	1
Prestige	5	4	4	4
Economic returns	5	7	1	3
Recognition, admiration, or popular acclaim	0	2	0	3
Surroundings	5	7	3	3
Associates	0	1	1	1
Supervisory relations	0	2	0	1
Variety	3	4	6	3

Table H-5

Comparison of Dutch and American, Male and Female on Values--Free Time Activities Check List

Item	Dutch Boys N=24	American Boys N=24	Dutch Girls N=24	American Girls N=24
Avoidance of boredom	5	8	7	9
Excitement, adventure	4	2	3	0
Danger, risk	0	0	1	0
Avoidance of danger, risk	2	2	4	3
Avoidance of violence, killing	2	0	7	4
Effort, including thinking	0	2	2	1
Organization, rules, structure	0	1	0	0
Relaxation, freedom from constraints	2	6	6	7
Sociability	2	5	0	6
Solitude	0	1	1	0
Independence	0	2	0	1
Leadership	0	0	1	0
Followership	0	1	0	1
Challenge, difficulty	0	3	0	0
Avoidance of difficulty	1	1	1	4
Competition	0	2	0	1
Avoidance of competition	0	0	1	1
Competence, skill, constructiveness	1	2	3	0
Activity, participation	4	6	1	8
Passivity, spectatorship	2	1	6	0
New experience, self-development	0	0	0	3
Cultural-intellectual values	0	0	1	1
Anti-intellectual values, avoidance of cultural activities	1	1	1	1

Table H-6

Comparison of Dutch and American, Male and Female on Interests--Occupations Check List

Item	Dutch Boys Like N=24	Amer. Boys Like N=24	Dutch Boys Dislike N=24	Amer. Boys Dislike N=24	Dutch Girls Like N=24	Amer. Girls Like N=24	Dutch Girls Dislike N=24	Amer. Girls Dislike N=24
Science	0	6	0	2	1	0	0	4
Mathematics	0	4	0	0	0	2	0	0
Writing	2	4	7	3	7	7	1	2
Reading	0	0	0	0	0	1	0	1
Medicine	1	11	6	2	5	9	4	3
Teaching	8	9	5	6	15	10	4	5
Law	0	4	1	0	1	0	0	3
Engineering	0	2	0	0	0	1	0	0
Office work	2	7	12	7	8	19	8	1
Sales or store work	6	3	7	2	8	1	6	4
Social or personnel work	0	0	0	0	0	0	1	0
Service	0	3	4	4	6	7	0	3
Mechanics-technology	11	12	2	1	1	2	3	3
Music	2	0	1	0	1	2	0	0
Art--drawing, painting	2	2	2	1	0	1	1	1
Handwork, crafts	3	3	0	0	0	1	1	0
Driving cars and other vehicles	8	4	3	6	2	0	6	7
Sports	4	3	0	0	3	0	0	0
Cooking	2	1	5	4	5	5	0	4
Sewing	0	0	0	0	0	0	0	0
Travel	7	5	3	0	8	1	4	3
Airplanes	4	5	7	2	0	2	4	1
Ships and sea	8	5	6	4	2	1	11	7

Table H-7

Comparison of Dutch and American, Male and Female on Interests--Free Time Activities Check List

Item	Dutch Boys Like N=24	Amer. Boys Like N=24	Dutch Boys Dislike N=24	Amer. Boys Dislike N=24	Dutch Girls Like N=24	Amer. Girls Like N=24	Dutch Girls Dislike N=24	Amer. Girls Dislike N=24
Sports, participation	24	20	13	8	20	18	14	11
Sports, watching	16	16	14	0	10	14	12	8
Games other than sports	12	9	7	6	10	8	11	6
Nature	1	1	0	0	1	0	0	0
Water activities	2	4	2	0	3	4	2	2
Driving	3	6	0	0	2	0	3	1
Animals	1	0	0	0	0	0	0	0
Hobbies	2	5	0	0	1	0	2	3
Making collections	8	2	12	13	5	3	15	5
Music--performance	9	2	4	3	9	3	1	3
Music--listening	12	5	3	2	14	4	0	2
Art, drawing	2	4	5	3	4	4	2	6
Crafts, handwork	6	6	5	2	6	1	6	5
Participating in plays	6	1	2	4	4	3	0	4
Watching plays	8	0	0	3	5	2	0	5
Dancing	3	3	2	3	5	6	2	0
Parties	0	1	0	2	0	1	1	0
Night clubs	0	4	3	3	0	0	5	3
Belonging to clubs and organizations	4	0	1	0	2	3	2	3
Conversation	0	0	0	0	0	0	0	0
Travel	9	7	4	1	9	8	2	1
Reading	2	3	2	2	3	4	0	1

Table H-8

Comparison of Portland and Eugene, Male and Female on Values--Occupations Check List

Item	Portland Boys N=12	Eugene Boys N=12	Portland Girls N=12	Eugene Girls N=12
Altruism	1	2	3	1
Creativity	2	1	1	6
Intellectual stimulation	0	1	0	4
Esthetics	0	0	0	0
Achievement	0	0	0	1
Management of people	0	2	0	1
Way of life	0	2	2	1
Security	2	1	0	1
Prestige	0	3	2	2
Economic returns	2	1	1	3
Recognition, admiration, or popular acclaim	0	2	0	1
Surroundings	0	2	1	0
Associates	0	0	0	1
Supervisory relations	0	0	0	0
Variety	0	0	0	1

Table H-9

Comparison of Portland and Eugene, Male and Female

on Values--Free Time Activities Check List

Item	Portland Boys N=12	Eugene Boys N=12	Portland Girls N=12	Eugene Girls N=12
Avoidance of boredom	2	4	3	4
Excitement, adventure	1	1	0	0
Danger, risk	0	0	0	0
Avoidance of danger, risk	0	1	2	2
Avoidance of violence, killing	0	1	1	3
Effort, including thinking	0	1	1	2
Organisation, rules, structure	0	0	0	0
Relaxation, freedom from constraints	1	2	3	5
Sociability	6	8	6	8
Solitude	1	0	4	1
Independence	0	0	0	0
Leadership	0	0	0	0
Followership	0	0	0	0
Challenge, difficulty	0	1	0	0
Avoidance of difficulty	0	0	2	1
Competition	1	0	0	0
Avoidance of competition	0	0	0	1
Competence, skill, constructiveness	1	1	0	0
Activity, participation	2	3	3	1
Passivity, spectatorship	0	0	0	1
New experience, self-development	0	1	1	1
Cultural-intellectual values	0	1	0	5
Anti-intellectual values, avoidance of cultural activities	1	0	1	0

Table H-10

Comparison of Portland and Eugene, Male and Female on Interests--Occupations Check List

Item	Portland Boys Like N=12	Eugene Boys Like N=12	Portland Boys Dislike N=12	Eugene Boys Dislike N=12	Portland Girls Like N=12	Eugene Girls Like N=12	Portland Girls Dislike N=12	Eugene Girls Dislike N=12
Science	2	5	2	0	0	0	0	2
Mathematics	0	4	0	1	0	1	0	1
Writing	3	3	1	4	7	4	1	2
Reading	0	0	0	0	0	0	0	0
Medicine	1	3	2	2	6	5	1	2
Teaching	2	4	6	6	9	4	2	4
Law	0	0	0	0	0	0	0	0
Engineering	0	1	0	0	0	0	0	0
Office work	3	3	4	7	12	7	0	2
Sales or store work	0	1	0	0	0	0	3	2
Social or personnel work	0	0	0	0	0	0	0	0
Service	0	2	2	2	1	4	1	3
Mechanics-technology	2	2	2	1	0	0	2	3
Music	0	0	0	0	0	0	0	0
Art--drawing, painting	0	1	0	0	0	0	0	0
Handwork, crafts	0	1	0	1	0	2	0	0
Driving cars and other vehicles	1	2	7	4	1	0	8	8
Sports	2	4	1	0	1	1	0	1
Cooking	1	2	5	2	6	5	1	1
Sewing	0	0	0	0	0	0	0	0
Travel	0	2	0	0	0	1	2	0
Airplanes	1	2	2	0	0	1	1	2
Ships and sea	3	1	2	3	0	0	7	5

Table H-11

Comparison of Portland and Eugene, Male and Female on Interests--Free Time Activities Check List

Item	Portland Boys Like N=12	Eugene Boys Like N=12	Portland Boys Dislike N=12	Eugene Boys Dislike N=12	Portland Girls Like N=12	Eugene Girls Like N=12	Portland Girls Dislike N=12	Eugene Girls Dislike N=12
Sports, participation	10	11	3	11	11	12	2	12
Sports, watching	8	8	1	4	11	9	2	8
Games other than sports	4	6	1	4	5	8	3	6
Nature	0	0	0	0	0	0	0	1
Water activities	2	2	0	1	1	1	0	0
Driving	1	4	0	0	0	1	0	1
Animals	0	0	0	0	0	0	0	0
Hobbies	0	1	1	2	2	1	0	0
Making collections	3	1	5	5	1	3	11	6
Music--performance	2	3	2	1	1	3	0	0
Music--listening	3	1	3	3	5	4	4	1
Art, drawing	2	3	2	2	4	4	2	4
Crafts, handwork	3	4	0	5	3	2	3	2
Participating in plays	0	2	3	1	1	2	3	0
Watching plays	0	0	3	1	1	3	2	1
Dancing	0	0	0	1	3	3	0	0
Parties	0	0	0	0	1	0	0	0
Night clubs	0	0	0	1	1	0	1	3
Belonging to clubs and organizations	1	0	0	1	0	0	0	1
Conversation	0	0	0	0	0	0	0	0
Travel	4	4	0	0	5	3	0	0
Reading	0	1	0	1	0	2	0	0

Table H-12

Choice Pattern--Occupations

Number of Positive Choices for Each Occupation in Each Sample

Item	Dutch Boys N=24	Dutch Girls N=24	North Bend Boys N=24	North Bend Girls N=24	Eugene Boys N=12	Eugene Girls N=12	Portland Boys N=12	Portland Girls N=12
Contractor	6	0	19	2	9	0	3	1
Actor	7	13	6	10	5	8	2	2
Lawyer	3	5	17	7	8	6	2	5
Pharmacist	4	8	17	12	7	5	2	2
Architect	10	5	15	6	10	5	5	4
Baker	5	4	4	10	3	5	1	6
Athlete (Professional)	10	7	10	1	9	4	7	4
Bookkeeper	2	1	7	22	0	5	2	9
Farmer	5	5	13	3	4	3	4	3
Bus Driver	11	5	7	0	3	0	1	1
Manager	9	3	18	7	7	9	4	10
Doctor	5	10	16	12	9	8	2	9
Minister	2	1	8	2	4	3	0	1
Electrician	12	0	16	2	5	0	4	0
Factory Worker	6	1	10	2	3	3	4	2
Traveling Salesman	11	7	11	1	4	2	2	2
Watchmaker	3	2	2	2	3	2	0	0
Engineer	12	1	19	3	8	2	6	2
Journalist	12	13	10	14	5	6	3	9
Office Worker	0	6	12	19	8	9	6	12
Captain (Ship)	14	3	12	1	4	3	4	0
Barber or Hairdresser	2	23	5	15	3	7	2	11
Cook	7	7	6	11	4	8	1	9
Rancher	6	2	16	10	7	7	8	8

Table H-12 continued on next page

Table H-12 Continued

Choice Pattern--Occupations

Number of Positive Choices for Each Occupation in Each Sample

Item	Dutch Boys N=24	Dutch Girls N=24	North Bend Boys N=24	North Bend Girls N=24	Eugene Boys N=12	Eugene Girls N=12	Portland Boys N=12	Portland Girls N=12
High School Teacher	13	16	13	13	6	8	4	8
Plumber	5	0	7	0	2	0	3	0
Sailor	11	4	11	1	6	1	6	0
Milkman	3	1	5	1	4	0	1	0
Bricklayer	5	1	6	0	0	0	2	0
Mechanic	14	2	19	1	6	0	4	1
Scientist	6	5	13	5	8	7	4	4
Grade School Teacher	9	17	7	18	3	7	2	9
Pilot (Airplane)	11	3	17	3	7	3	5	1
Policeman	5	7	9	3	5	2	3	1
Mail Carrier	2	0	7	3	3	1	3	0
Professor	4	3	13	4	6	4	4	6
Painter	9	6	10	8	2	7	6	4
Writer	3	14	7	11	6	9	6	9
Secretary	1	12	5	20	0	10	1	12
Steward or Stewardess	10	19	4	21	3	9	1	10
Dentist	2	8	12	6	4	4	2	1
Taxi Driver	10	4	5	2	5	1	3	1
Draftsman	15	10	14	3	6	1	5	0
Carpenter	9	2	15	2	3	1	4	1
Typist	4	12	5	22	0	9	3	10
Nurse (Male or Female)	1	20	5	20	0	7	1	9
Fisherman	8	1	13	2	3	1	5	0
Garbageman	0	0	5	0	2	0	1	0
Storekeeper	10	12	8	14	5	6	4	8
Singer	8	11	2	9	4	8	3	5

Table H-13

Choice Pattern--Free Time Activities

Number of Positive Choices for Each Activity in Each Sample

Item	Dutch Boys N=24	Dutch Girls N=24	North Bend Boys N=24	North Bend Girls N=24	Eugene Boys N=12	Eugene Girls N=12	Portland Boys N=12	Portland Girls N=12
Automobile Racing	15	2	16	4	5	1	7	1
Watching Auto Races	18	6	20	7	5	4	8	8
Driving a Car	20	13	24	20	10	7	11	10
Playing Basketball	12	9	19	21	8	5	10	5
Watching Basketball Games	7	8	16	19	8	8	10	11
Club Meetings	13	11	6	13	4	10	3	7
Checkers	16	6	13	11	3	5	7	4
Dancing	13	16	14	21	7	10	7	11
Eating	17	14	16	16	10	11	9	11
Bicycling	17	19	21	19	8	11	9	9
Going to Movies	18	15	19	22	10	11	11	12
Photography	13	17	12	9	7	7	7	6
Golf	5	11	15	9	6	4	6	5
Running	12	5	21	13	7	3	6	8
Hunting	11	2	20	4	8	2	10	3
Playing Cards	16	11	17	20	10	9	8	6
Camping	18	24	21	22	10	10	10	11
Puttering Around	16	14	16	17	8	10	7	8
Reading	16	21	18	20	4	11	9	11
Model Building	12	0	17	3	8	3	7	1
Visiting a Museum	14	11	15	13	4	9	5	5
Collecting Coins	7	2	7	5	1	3	5	2
Playing an Instrument	14	16	11	11	6	10	5	6
Going to Concerts	4	7	3	10	1	6	0	3
Going to Night Clubs	5	0	9	3	4	2	6	6

Table H-13 continued on next page

Table H-13 Continued

Choice Pattern--Free Time Activities

Number of Positive Choices for Each Activity in Each Sample

Item	Dutch Boys N=24	Dutch Girls N=24	North Bend Boys N=24	North Bend Girls N=24	Eugene Boys N=12	Eugene Girls N=12	Portland Boys N=12	Portland Girls N=12
Riding a Horse	13	19	17	19	7	11	8	12
Record Playing	21	21	19	22	9	11	10	12
Collecting Stamps	10	7	5	4	1	4	4	1
Radio Listening	18	21	17	20	7	9	10	12
Traveling	16	18	18	21	9	12	9	11
Skating	22	21	14	22	3	9	9	12
Chess	10	1	13	6	4	6	9	3
Painting	9	11	10	9	3	10	5	10
Skiing	14	19	18	19	11	12	9	10
Crossword Puzzles	12	11	10	8	2	2	2	4
Drawing	12	16	14	12	4	6	5	9
Watching TV	18	17	20	21	12	10	10	8
Tennis	12	16	18	20	10	10	8	10
Woodworking or Other Handwork	10	11	14	7	4	4	7	5
Acting in Amateur Plays	9	6	3	13	2	9	0	4
Going to Plays	17	19	4	15	4	11	2	5
Gardening	9	13	6	12	1	4	4	5
Going Out With a Friend	19	16	21	24	10	10	9	12
Collecting Sugar Sacks, Match Books, etc.	7	7	2	3	2	2	0	2
Fishing	13	7	22	9	10	3	11	7
Playing Football	18	5	21	9	9	2	11	4
Watching Football Games	15	10	21	15	8	8	10	9
Walking	10	20	21	21	6	12	6	11
Sailing	15	19	17	14	7	10	7	10
Swimming	22	21	23	22	12	12	12	12

APPENDIX I

SUPPLEMENTARY STATISTICAL INFORMATION--

VALUES STUDY

1. Rotated Factor Matrix. Personal Directions. Item Factors. All American Samples.
2. Rotated Factor Matrix. Personal Assumptions. Item Factors. All American Samples.
3. Rotated Factor Matrix for Inter-Person Correlations. North Bend Sample.
4. Rotated Factor Matrix for Inter-Person Correlations. Dutch Sample.

Table I-1

Rotated Factor Matrix

Personal Directions. Item Factors. 96 American Subjects

	Factors															
Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.13	-.06	.13	.19	-.08	-.19	.66	.04	.30	-.06	-.06	.18	.14	-.19	-.09	-.18
2	.00	.01	-.12	-.02	.01	.74	.15	.05	-.04	-.13	-.06	-.05	-.05	-.23	.07	-.06
3	.00	.24	.13	.61	-.12	.11	.18	.01	-.07	-.14	-.15	-.19	-.06	.05	.29	-.24
4	-.07	.13	-.11	-.05	-.14	.18	.01	.04	.08	-.78	.04	-.09	.01	-.06	-.07	.04
5	.58	-.28	.25	.17	-.11	-.12	.01	-.15	.21	-.07	.05	.12	-.19	.30	-.08	.07
6	.18	-.01	.11	.04	-.08	-.12	-.71	-.10	.13	-.01	-.02	-.09	.03	-.10	-.10	-.25
7	.65	-.13	.10	.01	-.08	.06	.00	.15	.03	.24	.01	-.08	.11	.25	.10	-.20
8	-.11	-.10	.11	-.11	-.17	.08	.12	.10	.19	.05	.18	.15	.74	-.15	-.08	.01
9	-.09	.14	-.32	.10	-.11	.10	-.13	.00	-.05	.08	.74	.06	.13	-.01	.02	.01
10	-.02	.06	-.01	-.19	.26	.05	-.12	-.69	.13	.07	.17	.13	-.03	.06	.07	.09
11	-.11	-.02	-.86	-.03	-.12	.04	.03	-.01	.10	-.18	.06	.04	.07	-.07	-.16	-.11
12	.07	.41	.49	-.32	-.07	-.03	-.08	.04	.07	-.17	.06	-.05	.12	-.04	.00	-.23
13	.05	.02	.03	.07	-.15	-.16	.01	.00	.18	.07	.02	.10	.02	.81	-.01	-.05
14	-.06	.07	.24	.08	.04	.01	-.06	.00	.02	.20	-.04	-.17	-.09	-.03	.76	.00
15	-.08	-.19	.06	-.24	.04	-.03	-.52	-.20	.04	-.04	-.02	.18	-.09	-.30	.35	.02
16	-.04	-.04	.15	-.04	-.02	-.07	.03	.07	-.88	-.01	.02	.06	-.04	-.07	.02	-.05
17	-.19	.13	.05	-.10	.04	-.02	-.01	.81	.00	.07	-.01	.14	.08	.10	-.01	-.00
18	-.36	.15	-.06	-.13	-.30	.30	.26	-.31	-.12	.14	.13	-.24	-.19	-.04	-.11	.05
19	-.18	.02	.09	-.13	.78	.07	-.04	-.14	.04	.05	.01	-.12	.00	-.05	.04	.06
20	-.07	-.07	.04	-.16	-.63	.12	-.12	-.15	-.13	-.24	.00	-.03	.06	.14	.18	.29

Table I-1 continued on next page

Table I-1 Continued

Rotated Factor Matrix

Personal Directions. *Item* Factors. 96 American Subjects

Items	Factors 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
21	-.36	.06	.10	.05	.17	-.03	-.18	.30	.04	-.16	.06	-.21	-.10	.11	-.33	-.40
22	.33	.28	.04	-.10	.35	.01	.25	.14	-.12	-.14	-.08	.13	-.08	.48	-.09	.02
23	.14	.13	-.24	.11	.14	-.06	.15	.54	.27	.05	.25	-.45	-.04	-.03	-.08	-.02
24	-.24	.10	.07	-.02	-.01	-.14	.08	.04	-.02	-.09	-.00	-.14	.01	-.03	.01	.81
25	-.07	.25	-.09	-.02	-.03	-.05	-.00	-.05	-.57	.11	.17	.08	.00	-.29	-.04	.29
26	.04	-.19	.06	-.12	.24	.27	.03	.10	.15	.27	-.22	-.16	.25	.03	-.62	-.08
27	.02	-.69	-.11	-.01	-.24	-.08	.04	-.04	-.04	.19	-.04	-.00	-.08	.04	-.10	-.20
28	-.16	-.11	.03	.00	-.16	-.13	-.21	-.54	.02	.27	.11	-.29	-.00	.00	.02	-.25
29	.21	-.72	.00	.07	.06	.01	-.09	.05	.24	.12	-.13	-.03	.03	.02	-.00	.06
30	-.37	-.19	-.21	-.11	-.08	-.26	.09	-.31	-.07	-.08	-.22	-.18	.02	.10	.39	.03
31	-.01	-.06	-.09	.84	.04	.07	.03	.05	.07	.07	.09	.04	.11	.03	-.01	.04
32	.11	.15	.27	-.07	.14	-.18	.09	.09	.46	.01	.10	.33	-.04	-.11	-.30	.10
33	-.09	-.74	.05	-.18	-.02	.10	-.03	-.25	-.15	-.14	.10	-.05	.07	-.21	-.02	-.02
34	-.12	-.11	.16	-.22	-.12	.03	.02	-.01	.13	.06	.05	.13	-.77	-.14	.12	-.03
35	.02	.06	-.10	-.01	-.07	.08	.11	.08	-.04	.08	.03	.82	-.01	.12	-.09	-.10
36	.11	.08	-.30	.08	-.09	.18	-.13	.17	.05	.16	-.71	.08	.03	-.01	.01	.03
37	.74	.04	-.01	-.09	-.10	-.02	-.06	-.15	.05	-.03	-.22	-.01	-.00	-.09	-.18	-.14
38	-.31	.39	.15	-.04	-.16	-.17	-.07	-.04	.05	.35	-.09	-.01	.02	-.23	-.27	.30
39	.00	.06	-.06	-.20	.06	-.76	.16	.09	-.13	.08	-.01	-.21	-.12	-.08	.18	.09
40	-.25	.19	.12	.21	.47	-.18	-.08	.09	-.27	-.39	-.04	.05	-.01	.06	-.14	.16

Table I-2

Rotated Factor Matrix

Personal Assumptions. Item Factors. 96 American Subjects.

Items	Factors 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	.11	.09	-.05	-.03	.01	-.00	-.03	-.07	-.05	-.06	.09	.83	.10	-.04	.05	.02	.09	-.03	-.01	-.03	.04
2	-.33	-.08	-.16	.12	-.08	-.16	.03	-.11	.07	-.27	-.08	-.05	.18	-.38	-.04	-.01	-.19	-.31	-.04	-.03	-.33
3	.10	.18	-.11	.10	.11	-.07	.10	-.20	-.21	.05	-.11	.12	-.07	.04	.12	-.62	-.14	-.13	.11	.10	-.09
4	-.00	-.02	.07	-.77	.01	.12	.27	.00	-.17	-.03	.03	.13	-.06	-.14	-.22	-.00	-.01	-.11	.08	-.06	.14
5	.12	.44	.01	-.49	.10	-.05	-.10	.13	.22	-.16	.03	-.20	.12	-.18	.02	.06	-.00	.18	.25	.12	-.17
6	-.28	-.01	-.02	.25	-.01	-.22	.21	-.14	-.14	-.28	-.11	.12	.60	-.03	.03	.12	.11	.17	.02	-.08	.07
7	.12	.13	.07	.64	-.04	.11	.21	-.11	-.00	.08	-.01	.05	.11	-.21	-.22	-.05	-.06	.18	-.01	.10	-.03
8	-.05	.04	.04	.14	-.04	.04	-.25	-.18	.15	.02	-.20	-.14	.55	-.33	.19	-.10	-.17	-.11	-.15	.09	.03
9	-.07	.09	.02	.04	.06	.01	.11	.08	.08	-.01	-.07	.01	-.03	-.02	-.03	-.04	-.02	.15	-.01	.07	-.81
10	.00	.24	-.08	.02	.35	.21	.12	-.19	-.23	-.03	-.02	-.20	.10	-.03	-.31	-.01	.25	.17	-.21	.30	-.07
11	.02	-.10	-.86	.00	.02	.00	-.01	.02	.01	.07	-.02	.04	-.13	.02	-.11	-.02	.02	-.01	.01	.01	-.00
12	.13	.09	-.02	.30	.08	.12	.47	-.01	.10	-.28	-.10	-.06	-.14	-.00	-.37	-.03	-.03	-.19	.02	.32	.14
13	.12	.67	-.06	-.07	-.06	.04	-.22	-.04	-.01	-.06	.10	.37	.05	.22	.04	.11	-.02	-.00	-.03	-.05	-.04
14	-.08	-.06	-.13	-.05	-.05	-.76	.03	-.01	-.11	.10	-.10	.15	.00	-.09	-.03	.02	-.04	-.13	.00	-.01	-.11
15	-.04	-.03	.32	-.15	-.14	.19	-.12	-.27	-.21	.03	-.04	-.09	.28	.02	.34	.27	-.28	.02	-.13	.10	-.19
16	-.14	-.14	.29	.05	.04	-.19	.09	.14	-.02	.21	-.23	-.13	-.02	.12	.17	-.04	-.06	.33	.23	.50	-.04
17	.05	-.18	-.18	-.00	.49	.01	-.05	.15	-.14	-.13	.03	-.04	.07	.20	-.16	.30	.18	-.09	.30	.18	.04
18	-.03	-.04	-.01	-.04	.09	.04	.06	-.03	-.08	.06	.03	.10	-.03	.04	-.01	-.04	.86	-.10	.08	-.02	-.01
19	-.16	.21	-.08	-.21	.13	.03	.01	-.19	-.03	.13	.58	-.05	-.05	-.23	.11	.08	-.23	-.11	-.09	-.17	-.05
20	-.36	-.09	.32	.27	-.13	.08	.05	.23	-.19	-.29	-.15	-.04	-.14	-.38	.24	.08	.14	.02	-.04	.11	.01
21	-.12	.01	-.16	-.15	-.18	.14	.09	.09	-.26	.13	.31	-.29	-.01	-.42	-.04	.21	.09	.16	.21	-.10	.00
22	.08	.26	.24	.27	-.13	.07	-.15	.06	-.27	-.01	-.02	-.04	.02	-.28	-.44	.17	-.04	-.08	-.04	-.32	-.11
23	-.01	-.05	-.25	.04	.22	-.20	.05	.07	.37	.19	-.35	.13	-.13	-.33	-.18	.13	.05	.08	-.04	-.02	.22
24	-.05	-.00	-.02	.06	-.08	.07	.10	.05	.88	.00	.08	-.07	-.06	-.03	-.02	.14	-.06	-.01	-.01	-.03	-.12
25	-.11	.01	.02	-.06	-.06	-.03	-.07	.04	.03	-.03	-.06	.01	-.08	-.06	.12	-.09	.00	.12	-.00	-.81	.05

Table I-2 continued on next page

Table I-2 Continued

Rotated Factor Matrix

Personal Assumptions. Item Factors. 96 American Subjects.

Items	Factors																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
26	.03	-.01	.11	.11	-.73	.07	-.22	-.14	.10	-.09	.01	.02	.12	.01	-.21	-.02	-.11	.01	.07	-.07	.06
27	.08	.00	-.00	-.15	.01	-.10	.02	.09	-.01	.06	.03	.06	-.05	.07	-.01	-.07	.10	-.81	.11	.09	.16
28	.01	.01	-.18	.06	.09	-.03	-.09	-.29	.08	-.12	-.02	-.14	-.76	-.03	.10	.03	.03	-.01	-.05	-.10	.00
29	-.17	-.12	.31	-.25	-.03	.05	-.27	.11	-.10	-.10	.12	.20	-.01	-.24	-.03	-.22	-.12	.20	-.33	.08	-.27
30	-.05	.05	.14	.06	.01	.03	.04	.02	-.05	.02	.05	.03	-.00	-.01	.80	.06	.00	.01	-.10	-.11	.04
31	.07	.02	.05	.05	.00	-.04	.00	-.04	.10	-.10	.80	.16	-.07	-.09	.01	.06	.10	.01	.15	.09	.09
32	.14	.00	.24	.08	.13	-.69	-.14	-.02	.11	-.01	.23	-.29	.07	.09	.02	-.05	.07	.06	-.11	.01	.18
33	-.09	-.04	-.00	.11	.04	-.08	.03	-.09	-.02	-.04	-.15	.02	-.01	-.07	.08	.06	-.07	.06	-.84	-.03	-.02
34	.14	.12	.12	-.14	-.05	.22	-.53	-.26	-.03	-.03	-.21	.16	.05	-.02	.01	-.11	.01	-.09	.00	-.03	.34
35	.22	-.17	-.14	.09	-.07	.03	.06	.21	-.05	-.03	-.12	.02	-.11	.75	.03	.02	.01	-.15	.02	.06	-.08
36	-.10	.06	-.04	.09	-.16	-.07	-.82	.10	-.06	-.05	.01	-.02	-.14	.00	-.12	.06	-.03	-.02	.07	-.07	.09
37	.17	-.03	-.11	.19	-.55	.21	.01	-.10	.00	-.23	.03	-.33	.03	-.12	.25	.01	.02	.04	-.09	-.22	.16
38	.22	-.14	.14	.17	.58	.27	.02	-.11	.23	-.15	.11	-.11	-.03	-.05	-.09	.03	-.11	.05	-.00	-.24	.07
39	.05	-.71	-.25	-.16	.07	.02	-.15	-.01	.03	.01	-.02	.02	.13	.18	.04	.13	.12	-.04	-.08	.04	.01
40	-.05	-.10	.04	-.03	-.15	.05	-.03	.04	-.05	-.12	-.03	-.10	.06	-.03	-.14	-.82	.12	.00	-.01	-.14	.00
41	.05	-.05	-.09	.11	.05	-.11	.04	.04	-.01	.86	-.07	-.05	.00	-.03	.02	.08	.06	-.05	.03	.07	.02
42	-.07	.03	-.11	-.15	-.05	.14	.02	.48	-.15	-.00	-.07	.10	.01	.25	.20	-.02	-.31	.25	.03	.23	.37
43	-.03	-.01	.02	-.07	.15	.00	-.06	.84	.08	.08	-.11	-.09	.10	.02	-.01	.08	-.01	-.11	.07	-.05	-.14
44	.80	-.01	-.01	.08	.03	.08	.11	-.02	-.10	.01	.02	.15	-.09	.21	-.11	-.04	-.05	-.12	.15	.08	.04
45	.09	.16	.04	-.25	.05	.01	.05	-.06	-.03	-.02	-.18	-.37	.04	.56	-.01	.06	.02	.06	.04	.12	.26
46	-.53	.01	.16	-.02	.10	.27	.13	.04	-.08	-.02	.12	.08	.06	.03	-.09	-.13	-.46	-.05	.00	-.09	-.26
47	-.20	-.02	.13	.20	.30	.06	-.07	-.33	-.08	.14	-.09	.06	-.07	.51	.03	.01	.05	.22	.33	.04	.07
48	-.08	.01	.03	-.20	-.29	.13	.41	-.15	.15	.18	-.18	-.12	-.29	.27	-.17	.04	.14	-.21	.00	.06	.05
49	-.21	-.08	.05	-.00	-.24	.21	.23	.14	.16	.41	.24	-.15	.14	.14	.17	.03	.01	.15	-.48	-.03	.09
50	.36	-.52	.17	.03	-.02	-.24	.23	.03	.03	.00	-.10	.09	-.23	.04	-.05	-.01	-.20	.33	.05	-.04	.03

Table I-3

Rotated Factor Matrix Based on Matrix of Inter-Person Correlations. North Bend Sample.

	Factors													
Persons	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	.04	.24	-.49	-.25	-.28	-.41	-.20	-.01	-.14	-.11	-.25	.00	-.13	.02
2	.10	.15	-.35	-.04	-.40	.10	.44	.09	.10	-.41	.02	.06	-.14	-.09
3	.14	-.07	-.32	-.54	-.13	-.10	.16	-.03	.09	-.10	.13	-.12	.07	.17
4	.24	.41	-.31	-.03	-.31	-.19	.12	-.06	-.08	.09	.26	.13	-.24	.19
5	.02	.09	-.48	.07	-.17	-.52	.24	-.05	-.06	-.30	.08	-.08	.10	.05
6	.19	.04	-.53	-.27	.07	.08	.32	.12	-.35	-.21	.04	-.02	.15	.17
7	.40	.21	.00	-.32	-.26	-.24	.03	.25	-.13	-.25	-.15	-.19	.12	-.15
8	.26	.07	-.40	-.22	.19	.03	.01	-.11	-.59	-.12	-.02	.03	-.17	-.06
9	.13	.19	-.05	-.02	.09	-.74	.07	-.08	-.11	-.15	.21	-.01	.04	.07
10	.00	.76	-.04	-.12	-.03	-.10	-.01	.15	.03	-.14	.22	-.03	-.10	.14
11	.09	-.09	-.15	-.10	-.08	-.16	.02	-.79	-.10	.01	.11	.12	.13	.15
12	.69	.03	-.30	-.10	-.11	-.13	.12	-.10	-.13	-.05	.12	-.17	.05	-.10
13	.31	.03	-.56	-.08	-.15	-.04	-.16	-.05	-.18	-.25	.34	.02	-.09	.23
14	.11	.41	-.11	-.13	.07	-.08	-.09	.04	-.01	-.71	.14	.03	.01	.07
15	.15	-.11	-.13	-.14	-.18	-.07	-.01	-.16	-.01	-.11	-.00	.10	.77	.01
16	.00	-.04	-.05	-.13	-.77	.01	.15	-.07	-.00	-.02	-.03	.13	.14	.05
17	.18	-.07	-.17	.00	-.22	-.16	-.01	-.05	-.15	-.61	.12	.17	.07	.02
18	.21	.01	-.62	-.21	.01	-.05	-.04	-.19	-.03	-.20	.20	.04	.10	-.01
19	.31	-.24	-.40	-.18	-.05	-.09	.06	-.07	-.15	-.44	.17	-.05	-.32	.06
20	.36	.15	-.17	-.28	.03	.02	.18	-.39	-.24	-.22	.36	.13	-.05	.02
21	.30	.35	-.30	-.14	-.25	.26	.17	-.24	-.12	-.17	.19	.19	.08	-.10
22	.07	-.11	-.23	-.06	-.12	-.30	.13	.03	-.63	-.11	.21	.01	.06	-.06
23	.14	.15	-.15	-.62	-.01	.07	.18	-.14	-.38	.05	.10	.07	.13	-.09
24	-.05	-.02	-.15	-.13	-.13	.04	-.01	-.09	-.03	-.05	-.01	.87	.09	-.04

Table I-3 continued on next page

Table I-3 Continued

Rotated Factor Matrix Based on Matrix of Inter-Person Correlations. North Bend Sample.

	Factors													
Persons	1	2	3	4	5	6	7	8	9	10	11	12	13	14
25	.77	.08	-.18	-.14	.04	-.03	.13	.06	-.17	-.10	.21	-.08	.17	.18
26	.55	.19	.01	-.11	-.05	-.02	-.05	-.24	-.48	-.24	.04	.16	.04	.15
27	.31	.14	-.37	-.22	-.15	.18	.27	-.05	-.08	-.28	.28	.13	.11	.01
28	.25	.28	-.04	-.22	-.47	-.01	.12	-.23	-.48	-.24	.15	-.07	.10	.02
29	.31	.03	-.03	-.25	-.22	-.31	.15	-.15	.02	-.47	-.07	-.00	.08	.18
30	-.05	.05	-.68	-.13	.13	-.24	.24	-.18	.01	-.14	.08	.08	.10	-.03
31	.03	.09	-.29	-.11	.18	-.08	.27	-.14	-.34	-.61	.08	-.06	.11	-.04
32	.30	.60	-.19	.02	.15	-.24	.24	-.19	-.06	-.05	-.18	-.01	.04	-.09
33	.06	.29	-.64	-.07	-.16	.01	.06	.12	-.21	.08	.08	.09	.12	.19
34	.22	.07	-.08	-.68	-.12	-.22	.05	-.31	-.02	-.07	.20	.07	-.09	-.05
35	.36	.00	-.14	-.46	-.01	-.11	-.06	.19	-.03	-.13	.19	.20	.23	.45
36	.21	.02	-.04	-.07	-.17	-.16	.79	.01	-.08	.03	.13	.00	.02	.17
37	-.04	.11	-.13	-.10	-.05	-.05	.16	-.18	.04	-.05	.06	-.08	-.03	.82
38	.23	.05	-.29	-.25	-.12	.01	.16	-.00	-.16	-.32	.52	-.12	.13	.04
39	.16	.43	-.14	-.02	-.19	-.03	.53	-.29	-.34	-.18	.00	-.08	-.16	.06
40	.13	.10	-.34	-.24	.13	-.17	.28	-.19	-.28	-.28	.15	.31	.03	.30
41	.00	.05	-.07	-.69	-.08	.10	-.09	.08	-.23	-.09	.01	.20	.05	.26
42	.14	.11	-.28	-.47	-.09	.27	.03	-.51	-.06	-.25	-.07	-.11	.10	.12
43	.50	.09	-.51	.03	-.06	-.02	.06	-.36	.02	-.13	.02	.22	.14	-.15
44	.48	.12	.07	-.40	-.02	-.24	.13	-.00	.16	-.15	-.10	.30	-.27	-.16
45	.56	.09	-.14	-.27	-.00	-.00	.36	-.24	-.10	-.18	-.02	.06	-.12	-.00
46	.05	.13	-.12	-.11	.06	-.20	.07	-.09	-.09	-.08	.77	.01	-.05	.09
47	.33	.02	-.31	-.45	-.04	.08	-.00	-.23	.00	-.19	.36	.04	.11	-.24
48	.24	-.01	-.59	-.09	-.10	.03	.00	-.23	-.30	-.10	.02	.14	-.17	.12

Table I-4

Rotated Factor Matrix Based on Matrix of Inter-Person Correlations. Dutch Sample.

Persons	Factors 1	2	3	4	5	6	7	8	9	10	11	12	13
1	.39	.45	.10	.01	.11	-.05	-.04	.16	.21	.21	-.13	.15	-.13
2	.07	.20	.19	.27	.38	.02	-.27	.18	.03	.06	-.11	-.57	.01
3	.13	.27	.07	.18	.27	.12	-.11	.15	.02	.05	-.10	.68	-.29
4	.16	.62	-.04	.01	-.04	-.13	-.04	-.06	.50	.21	-.08	.03	-.01
5	.24	.07	.25	.15	-.16	.05	-.09	.01	.21	-.03	-.41	-.32	-.12
6	.35	.25	.24	.21	.11	-.40	-.22	-.05	.13	.16	-.24	.03	.06
7	.07	.05	-.06	-.02	.12	-.10	-.86	-.10	.08	-.04	-.12	-.07	-.01
8	.21	.21	.15	.16	.01	-.21	-.03	.11	.02	.75	-.05	-.01	.09
9	-.09	.11	.07	.03	-.07	-.12	-.05	-.06	-.05	-.04	.09	.11	-.84
10	.18	.69	.34	.03	.01	-.12	-.04	-.10	.05	.19	-.08	.01	.17
11	-.09	.22	.09	.35	.25	-.20	-.24	.30	.32	.23	.00	.21	-.02
12	.13	.14	.09	-.02	.15	-.04	.06	.81	.12	.06	-.02	-.02	.10
13	.66	.10	.17	.20	.04	-.08	-.10	.11	.11	.16	-.27	.09	.20
14	.19	.15	-.09	.01	.05	-.02	-.15	-.01	.64	-.14	-.00	-.01	-.03
15	.18	.47	-.01	.01	.11	.02	-.12	.31	.23	-.15	.09	.11	-.25
16	.04	.12	.05	.05	.01	-.81	-.13	.03	.11	.18	-.07	-.07	-.10
17	.44	.33	.32	.01	.06	-.02	-.20	.18	.30	-.30	-.04	.02	.11
18	.24	.14	.05	.75	-.15	-.07	.03	.12	-.00	-.05	-.19	.06	-.10
19	.43	.03	-.04	-.08	-.03	-.25	-.43	.24	.17	.26	-.10	.10	-.10
20	.03	-.02	.12	-.08	.15	-.12	-.07	.19	-.03	-.04	-.79	.03	.11
21	.04	.71	.32	-.05	.08	-.05	-.11	.00	.13	-.18	.04	-.07	-.07
22	.69	.26	-.02	-.01	-.03	-.06	-.03	.08	.09	.07	.18	-.32	-.02
23	.11	.23	.21	.08	.06	-.07	-.07	.14	.72	-.02	-.02	.03	.19
24	.05	.32	-.01	.14	-.27	-.13	-.40	.40	.11	.24	-.15	.15	-.04
25	.58	.12	-.03	-.06	.26	-.47	.07	.07	.12	-.14	-.13	.04	-.15
26	-.03	-.08	-.11	.74	.19	-.00	.01	-.12	.07	.19	.13	-.07	.04
27	.04	.78	-.20	.01	-.15	-.14	.13	.30	.01	.04	.00	.02	-.08
28	.05	.00	.12	-.04	.24	-.22	.02	.13	.67	.31	-.22	-.05	-.02
29	.10	.07	-.10	.13	-.04	-.07	-.13	-.23	.32	.19	-.63	.04	.02
30	.09	.51	-.21	.02	.35	.12	-.12	.30	.06	.19	-.08	-.11	-.18
31	-.00	.09	.81	-.03	.04	-.12	.12	.05	.05	.10	-.09	-.05	-.04
32	.35	.51	.11	.29	.09	.00	-.16	.00	.13	.06	.07	.20	.10
33	.21	.01	.49	-.04	-.06	.17	-.41	.32	.22	.20	-.04	.03	-.28
34	.60	.26	-.07	.17	-.06	.07	-.11	.04	.28	.13	-.12	.22	.27
35	.47	.53	-.21	.13	.13	.03	.04	-.06	.10	.21	-.10	-.11	-.25
36	.47	-.00	.37	.10	.15	.03	-.19	.02	.35	.45	-.02	.08	-.10
37	.36	-.09	.23	.36	-.11	-.39	.01	.37	.30	-.13	-.07	.00	.02
38	.08	.05	.04	.04	.85	-.07	-.06	.08	.17	.01	-.05	.07	.08
39	.33	.10	.10	.15	.01	.03	.08	.30	.52	.15	-.23	-.08	-.19

APPENDIX J

SUPPLEMENTARY STATISTICAL INFORMATION ABOUT STANDARDIZED TESTS

1. Means--All Samples
2. Standard Deviations--All Samples

Table J-1

Means on All Test Scores for All Samples

	Dutch Boys Mean N=24	Dutch Girls Mean N=24	North Bend Boys Mean N=24	North Bend Girls Mean N=24	Eugene Boys Mean N=12	Eugene Girls Mean N=12	Portland Boys Mean N=12	Portland Girls Mean N=12
Progressive Matrices	44.33	50.67	46.42	45.38	49.08	50.83	43.83	47.00
Embedded Figures	44.50	51.04	52.79	74.67	70.67	75.17	88.33	50.92
Figure Drawing	2.66	3.32	2.60	2.77	2.63	2.91	2.42	3.07

Table J-2

Standard Deviations on All Test Scores for All Samples

	Dutch Boys SD N=24	Dutch Girls SD N=24	North Bend Boys SD N=24	North Bend Girls SD N=24	Eugene Boys SD N=12	Eugene Girls SD N=12	Portland Boys SD N=12	Portland Girls SD N=12
Progressive Matrices	8.31	3.53	8.45	6.07	5.45	6.35	6.15	3.79
Embedded Figures	26.06	41.15	50.45	50.40	49.47	56.08	68.27	27.79
Figure Drawing	.98	1.03	.93	.86	.64	.79	.43	.51